TOTALCOMP TLI INDICATOR

Operation and Maintenance Manual

Manual

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CONTENTS

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PRECAUTIONS

⚠️ **WARNING**	
	DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, CLEANING, OR SERVICING. FAILURE TO DO SO COULD RESULT IN BODILY HARM OR DAMAGE THE UNIT.

⚠️ **CAUTION**

- **Permit only qualified persons to service the instrument**
- **Before connecting or disconnecting any components, remove the power.**
- **Failure to observe these precautions may result in bodily harm, damage to or destruction of the equipment.**

⚠️
- The TLI Indicator is a precision electronic instrument, handle it carefully.
- Do not install the scale in direct sunlight.
- Verify the local voltage and receptacle type are correct for the TLI Indicator.
- Only use the original AC adapter, any other could cause damage to the TLI Indicator.
- Only plug the TLI Indicator into properly wire wall outlet. Avoid plugging in the AC Adapter to an extension cord.
- Avoid unstable power sources. Do not use near large users of electricity such as welding equipment or large motors.
- Avoid sudden temperature changes, vibration, wind and water.
- Avoid heavy RF noise.
- Keep the indicator clean

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1. SPECIFICATIONS
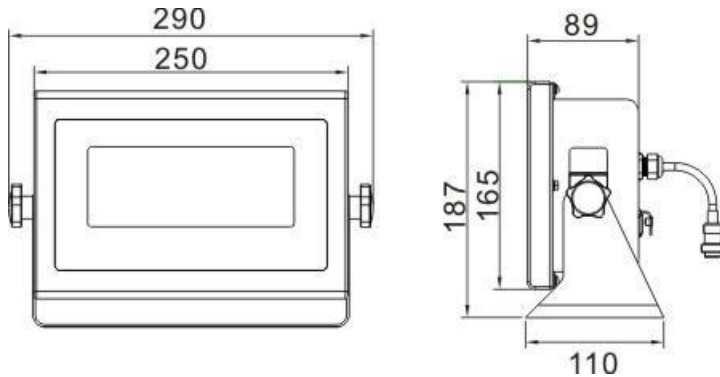
Model	TLI
Display	2 inch LCD
Housing	Stainless Steel
Operating Temperature	-10°C - 40°C / 14°F - 104°F
Resolution	1/6000
Key Pad	7 Keys
Power	AC Adapter (12V/500mA)/ Battery (6V/4Ah)
Calibration	Automatic External
Interface	RS-232 Output (installed), Relay output w/light tower and 4-20ma output are optional
Excitation Voltage	Max: 5V/150mA
Load Cells	Up to (4) 350 ohm load cell
ADC	Sigma Delta
ADC Update	≤1/10 second
Stabilization Time	One second typical
IP rate	IP65 (protected against low pressure jets of water)

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2. INTRODUCTION

- ➢ The TLI Indicator is a weighing instrument that amplifies analog signals from a load cell(s), converts it to digital data, and displays it as a mass value.

- ➢ The TLI Indicator is suitable for general weighing or more specialized applications such as check weighing, animal weighing, piece counting and accumulation applications.

- ➢ The TLI Indicator can connect directly to a number of printers or a PC via the standard RS-232 port.

- ➢ The TLI Indicator has a large LCD display (2") with a white LED backlight.

- ➢ The TLI Indicator has a number of options such as:

    - o Relay Output with a Light Tower
    - o 4-20ma Output
    - o 0-10VDC output

3. INSTALLATION

Unpacking

When you receive the TLI Indicator, inspect it to make sure that it has not been damaged during shipping. Please contact the carrier to file a claim for any damage during shipping.

- Remove the TLI Indicator from the carton.
- Remove the protective covering. Store the packaging to use if you need to transport the TLI Indicator at a later date.
- Make sure all components are included.
    1. TLI Indicator
    2. Power cable
    3. This Manual
    4. Wall/Table Mount Frame
    5. RS-232 & Load Cell connectors (in clear bag)

Parts Included:

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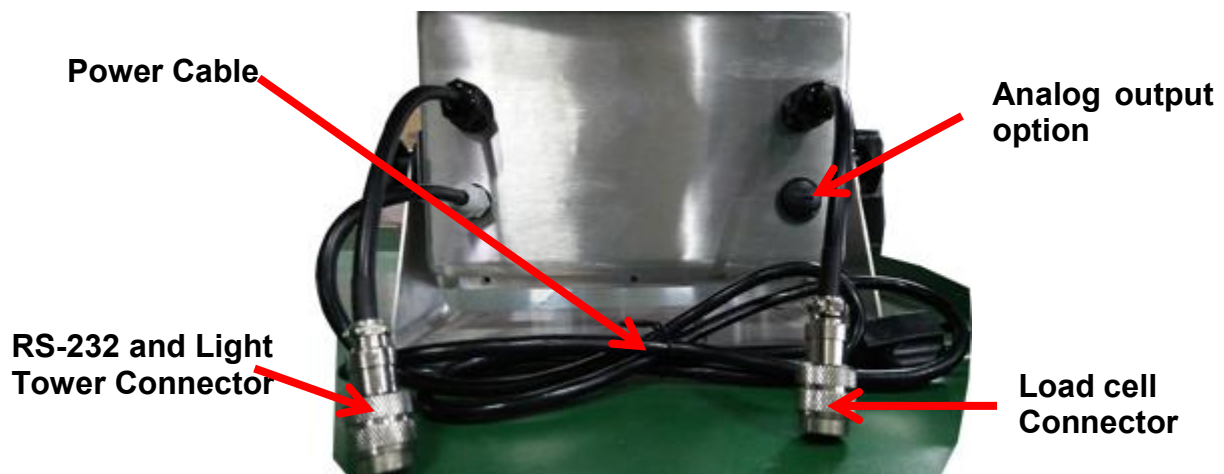
Initial Installation

- Place the TLI Indicator on a table or mount to a wall using the Table/Wall Frame.
- Plug Power cable into an easily accessible wall outlet with a protective earth/ground contact.
- Avoid using extension cords for the Power cable.

Load Cell Connector

- Use the enclosed 5-Pin connector for the Load Cells
- Solder your platform cable to the connector as shown below.

Pin	Connection
Pin 1	Signal +
Pin 2	Signal -
Pin 3	Shield
Pin 4	Excitation -
Pin 5	Excitation +

- The TLI Indicator can handle up to four 350 ohm load cells.
- The load cell excitation voltage is 5V DC ±5% between Excitation + and Excitation -.

Power Cable

Analog output option

RS-232 and Light Tower Connector

Load cell Connector

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Connect Power Cable and Charging

Note: Please charge the battery before using the scale for the first time.

- To charge the internal battery, Power cable plugs into a standard wall outlet. The scale does not need to be turned on to charge the battery. The CHARGE led on the front of the TLI Indicator will turn red while the power cable is providing power to the TLI Indicator.
- The battery should be charged for a minimum of 12 hours for full capacity.
- While plugged into the Power cable, there is an LED to indicate the status of battery charge. If the CHARGE LED is green, the battery has a full charge. If it is red, the battery is nearly discharged and if yellow, the battery is being charged.
- Do not use any other type of power cable other than the one supplied with the TLI Indicator.
- Verify that the incoming AC power is properly protected.

4. KEYS DESCRIPTION

Keyboard

Keys	Description
ON OFF	Power ON/OFF
ZERO	Set the zero point when the scale is empty
TARE	Tare function, subtracts empty container weight.
M R	Memory recall key, displays the stored values from the memory location.
PRINT M+	Accumulator key, current values will be stored to memory. Send the data to a printer or PC
UNIT	To select the weigh unit. (Kg, g, lb., oz., lb. oz.)
G/N	Display Gross or Net Weight.

Double Key Functions

Keys	Description
G/N + UNIT	Enter to set the high and low limits.
PRINT M+ + M R	Clear the memory.
TARE + ZERO	To enter or exit animal weighing mode.

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Secondary Functions of the Keys

Function	Keys
Used to select a menu item and/or load a value into memory	ZERO
Used to scroll through menu items and change the value of an active (flashing) digit	TARE
Used to move the active digit to right	MR
Used to move the active digit to left	PRINT M+
Used to enter in to the Parameters (during power-up sequence only)	UNIT
Used to move up one level in the Parameters or return to normal operation.	G/N

Display

Battery low

Weighing unit

Check Weighing LED's

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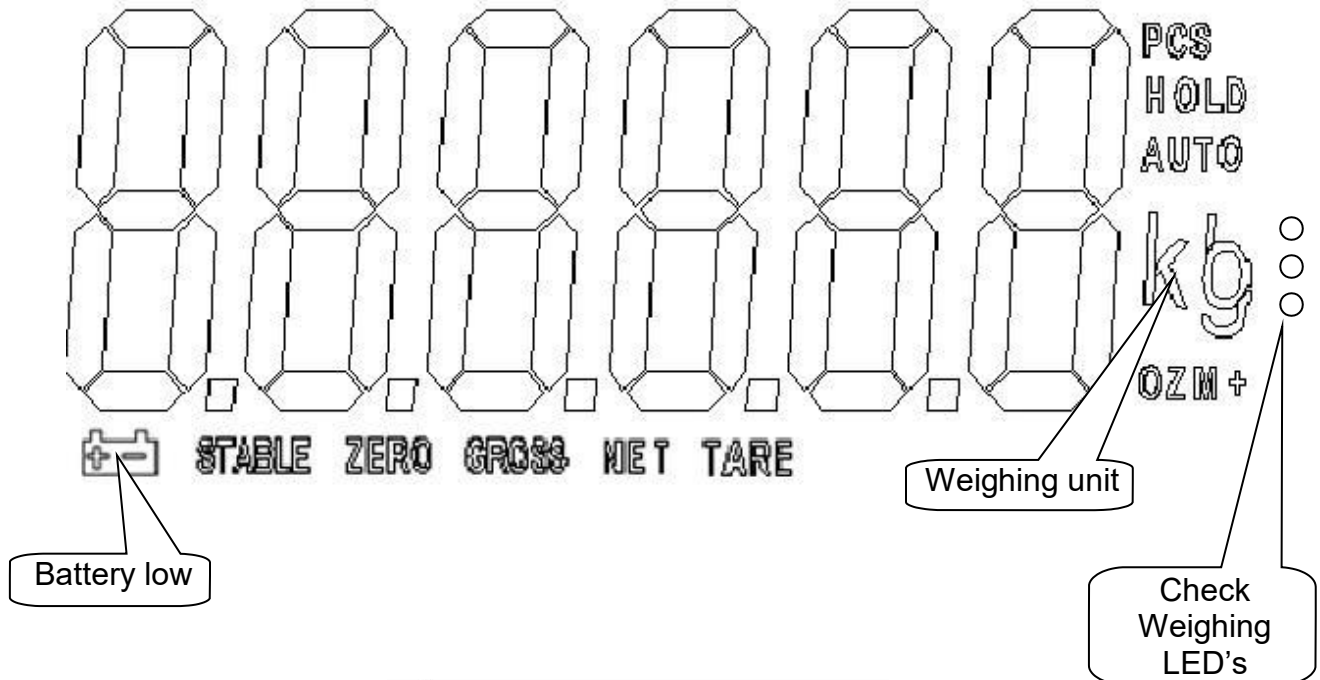
5. INITIAL SET UP

Initial Start-up

5.1 Power On/Off

Turn on the TLI Indicator by pressing **ON/OFF** key once.
The TLI Indicator turns on and starts a self-test before displaying a normal display.

NOTE: A warm-up time of 15 minutes allows the TLI Indicator to stabilize the internal temperature of the TLI Indicator. This is only needed after a period of more than 1-day of being off.

5.2 Keyboard Lock/Unlock
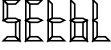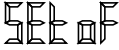
If activated, and the keys are not using within 10 minutes, the keyboard will be locked automatically. Once in the locked mode, pressing any key the display will show ┠-ᴸ◻┠ for a few seconds. Then the TLI Indicator will return to a normal display.
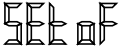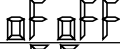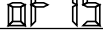
To unlock the TLI Indicator keyboard press and hold [UNIT] , [M R] and [ZERO] keys for three seconds. The TLI Indicator display will show ᵘⁿᴸ◻┠ for a few seconds. The TLI Indicator display will return to a normal display and the keyboard will be active.

To activate the Keyboard Lock feature, review parameter P4 in Section 6 of this manual.

5.3 Set auto power off

The TLI Indicator can be set to power off after a period of non-use extending its battery life between re-charging.
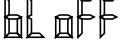
- Hold [ZERO] three seconds display will show ⟦SEtbL⟧

- Press [TARE] to select ⟦SEt oF⟧

- Press [ZERO] to confirm

- Press [TARE] to change the options.

- Press [ZERO] to confirm the option selected

- Press [ESC G/N] to exit this option

⟦SEt oF⟧	⟦oF oFF⟧	Set TLI Indicator to always on
	⟦oF 5⟧	Set TLI Indicator to turn off after 5 minutes of non-use
	⟦oF 15⟧	Set TLI Indicator to turn off after 15 minutes of non-use

5.4 Set Back Light

The TLI Indicator can set back light to one of three options.

- Hold **ZERO** three seconds display will show SEtbL

- Press **ZERO** to confirm

- Press **TARE** to change the options.

- Press **ZERO** to confirm the option selected

- Press **ESC G/N** to exit this option

SEtbL	$\mathsf{bL\ Au}$	Auto option: Backlight will turn on and off based on usage.
	$\mathsf{bL\ on}$	Always on: Backlight will remain on.
	$\mathsf{bL\ oFF}$	Always off: Backlight will remain off.

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6. PARAMETERS

To enter the parameter menu follow the following.

- Power on the TLI Indicator.

- Press **UNIT** key anytime during the start-up display test.

- Display will show ⌐п

- Press **PRINT M+** then **G/N** then **TARE** one at a time. The display will show a �^⌐ for each key pressed.

- If correct keys were pressed in sequence, the display will show POLHP. If a wrong key was pressed, the TLI Indicator will continue to its normal display.

Navigation within the Parameters of the TLI Indicator is accomplished by using the following keys:

TARE **Used to scroll through the main and sub menus, options, and change the value of a selected digit**

ZERO **Used to enter a selected main or sub menu, select an options or value**

PRINT M+ **MR** **Used to select a digit to the left or right of the current position**

G/N **Used to back one level in the Parameter menu**

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Note:

Access P3 Mode Parameters for (Div./Cap./Calibration):
Press CAL switch (momentary push button) for to access P3 mode parameters, CAL switch is located at the bottom of rear cover (see picture). Push button located inside the case use small screw driver or pin to push momentary button.

Back Panel

Housing screw w/Hole

Threaded Hole Calibration button inside
Rubber Gasket

Lead Seal W/wire

Gasket seal

Front Panel

Screw to cover calibration button

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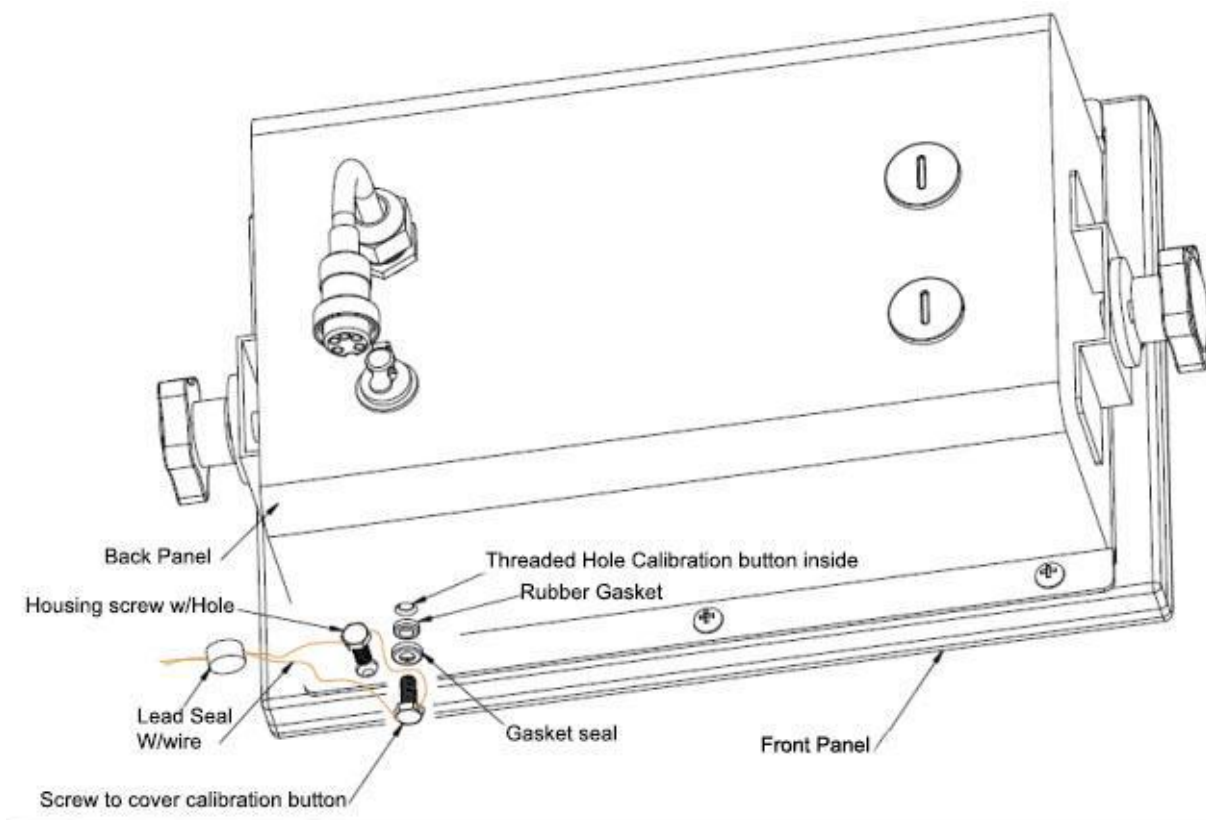
Menu	Sub Menu		Description	
P0 Check Weight P0 CHr	nEt H		Set high limit for check weighing	
	nEt L		Set low limit for check weighing	
	bEEP	no	No beep for check weighing	
		ot	Beep, when check weighing between the limits	
		nG	Beep, when check weighing out of the limits	
P1 Communication P1 Con	mode	Cont	Sends continuous data via the RS-232 port	
		St 1	Sends stable data once via the RS-232 port	
		StC	Send continuous stable data via the RS-232 port	
			To select manual accumulation by pressing <kbd>PRINT M+</kbd> key and Printer options for printouts.	
	Prt	DLP-50 LP50	Pr 0 Pr 1 Pr 2 Pr 3	There are four formats (see section 8.3) (LP50: DLP-50 Label Printer)
		STP103 StP 103	Pr 0 Pr 1 Pr 2 Pr 3	There are four formats (see section 8.3) (STP103/SRP275: Epson Format)
		SRP275 SrP275	Pr 0 Pr 1 Pr 2 Pr 3	There are four formats (see section 8.3) (STP103/SRP275: Epson Format)
		SRP770 SrP770	Pr 0 Pr 1 Pr 2 Pr 3	There are four formats (see section 8.3) (SRP770:)
		TPuP tPuP		Select TPuP printer. (TYJ-360-D roll paper printer)
	Auto		To set auto accumulation and auto printing	

		ASt	To send command to the TLI Indicator via the RS-232 port. Command R: read data Command T: Tare Command Z: Zero
		SEirE	To send continuous data to a remote display. (TSR/Aurora/LaserLigh)
	bAud		Sets the baud rate. Available baud rates are: **600 1200 2400 4800 9600**
	Pr		Set the parity: (7 even 1; 7 odd 1; 8 none 1) **7E1 7o1 8n1**
P2 Swt **P2 Swt**	**Prt**		Prints without accumulation (Clears the accumulation value)
	ACC		Accumulation without printing
	botH		Prints and accumulates
P3 Mode **P3 mod**	**Count**		Displays internal raw counts
	dECi		To set decimal point location options are: **0 0.0 0.00 0.000 0.0000**
	diu		To set display increment options are: **1 2 5 10 20 50**
	CAP		Set Full Scale Capacity of the Scale Platform
	CAL		Run Scale Calibration
	GrA		To set local geographical gravity (future)
P4 Other **P4otH**	**LoCt**		To set keyboard lock options are: **on oFF**
	Anm		To set animal mode options are: **on oFF**
P5 Unit **P5 unt**	**Kg / g / oz. / lb. oz.**		To enable/disable each weighing unit options are: **on oFF** (Primary unit is lb.)
P6 Ref **P6 rEF**	**A2n 0**		Automatic zero tracking Options: **0d, 0.5d, 1d, 2d, 4d**
	0AUto		Zero setting range, after switching on the scale to zero. Options: **0%, 2%, 5%, 10%, 20%**
	OrAnGE		Manually zero setting range. Options: **2%, 4%, 10%, 20%, 50%, 100%**

7. CALIBRATION

Note: To enter into the calibration mode operations, refer section 6. Page 14 for to enter and access.

7.1 Entering the Calibration Mode:

- Power on the TLI Indicator.
- Press the **UNIT** key anytime during the start-up display test.
- Display will show Pn
- Press the **PRINT M+** then the **G/N** then the **TARE** one at a time. The display will show a ⟷ for each key pressed.
- If correct keys were pressed in sequence, the display will show POCHP. If a wrong key was pressed, the TLI Indicator will continue to its normal display.
- Press the **TARE** key until the display shows P3 mod .
- Press the **ZERO** key to confirm, the display will show Count.
- Press the **TARE** key to select option CAL.
- Press the **ZERO** key to confirm and start calibration.

7.2 Normal Calibration:

- If the current unit is weighing in pounds, the display will show unLdLb
- If the current unit is weighing in kilograms, the display will show unLdKG
- Remove all the weight from the platform.
- When indicator displays the word STABLE in the lower left of the display, press the **ZERO** key to confirm.
- Display will show the last calibration weight.
- If want to change the calibration weight value, use the keys to select the desired digit.
- Press the **TARE** key to increment the value.

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- When the calibration weight value is correct, press the ZERO key to confirm.
- If the current unit is weighing in pounds, the display will show LoAdLb
- If the current unit is weighing in kilograms, the display will show LoAdbG
- Place the calibration weight on the platform.
- When indicator displays the word STABLE in the lower left of the display, press the ZERO key to confirm.
- If the calibration was successful, the TLI Indicator will display PASS
- Display will return to a normal weighing mode.
- Remove the calibration weight from the platform.
- The display will show 0 weight.

7.3 Linear Calibration:

Press TARE to select LinEr

Press the ZERO key to confirm

If the current unit is weighing in pounds, the display will show unLdLb

- If the current unit is weighing in kilograms, the display will show unLdbG

- Remove all the weight from the platform.
- When indicator displays the word STABLE in the lower left of the display, press the ZERO key to confirm.
- Display will be shown Ld0
- Ensure the platform is empty

- After stable and zero indicator on, press ZERO key to confirm. Display will be shown Ld1
- Place the calibration weight (1/3 of the capacity) on the platform.

- After stable and zero indicator on, press ZERO key to confirm.
- Display will be shown Ld2
- Place the calibration weight (2/3 of the capacity) on the platform.

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- After stable and zero indicator on, press **ZERO** key to confirm. Display will be shown Ld3

- Place the calibration weight (full of the capacity) on the platform.

- After stable and zero indicator on, press **ZERO** key to confirm.
- Display will be shown PASS and will be start self checking.

After self checking display will come to normal weighing mode.

8. OPERATION

8.1. Basic Weighing:

Definitions:
    Gross Weight: Total load applied to a scale platform
    Tare Weight: The weight of an empty container
    Net Weight: The weight of the material inside an empty container
        (Net Weight = Gross Weight – Tare Weight)

Zero
    Environmental conditions can lead to the TLI Indicator to drift off of a 0 value despite not having any load applied to the platform. To compensate for this press the **ZERO** key to return the display to a value of 0.

Tare
    The weight of any container can be stored as tare weight by pressing the **TARE** key. If the indicator connected to a Via RS-232, Computer you can send digital Tare example "net 110lb" make sure you have a space between the "net and the weight value. Also you can Key in the Tare value using the front keypad example press the Tare key for more than 3 seconds the indicator will beep and showing a flashing digit using the arrow keys enter the Tare value, than press Enter key, now the display will show actual weight on the platform without the entered Tare weight.

    Follow this procedure for using the Tare function.

1. Place an empty container on the platform.

2. Press the **TARE** key. 0 is displayed, and tare is stored and subtracted from the gross weight.
3. Place items in the empty container.
4. The TLI Indicator display will show the net weight of the material only.
5. Remove the container. The tare weight is displayed as a negative value. Only one Tare can be stored at a time.

6. Press the **G/N** key to change between gross weight and net weight.

7. To clear the tare value, remove the container and press the **TARE** key. 0 is displayed and the tare weight is cleared.

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3. Select Unit

Press the [UNIT] key, to change the display to read the weight in another unit of measure. The options are: kg / g / lb. / oz. / lb. oz. if they are enabled. Refer to Parameter P5 in Section 6 of this manual to enable and/or disable these units of measure.

8.2 Check Weighing and Check Counting
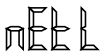
The TLI Indicator can perform Checkweighing or Check Counting by setting upper and lower limits to get a HI, LO, or OK led indication. A pulsing beep is also available as an audible for Checkweighing and Check Counting .

8.2.1. Setting Limits

- Press [G/N] and [UNIT] key together, display will be show nEt H .
- Press [TARE] key to select, nEt H, nEt L, PCS H, PCS L, and bEEP .

8.2.2 For Checkweighing Using Weight Limits Settings:

8.2.2.1 When the display shows nEt H:

- Press [ZERO] key to confirm, display will show all zeroes in the decimal format selected and start to blink the least significant digit.

- Enter the high limit weight value by using the [PRINT M+] [MR] keys to select the desired digit to change

- Press the [TARE] key to increment the weight value of the selected digit.
- Press the [ZERO] key when the desired weight value is displayed for the high limit value.
- Display will show nEt H.
- Press [TARE] key to select nEt L.

8.2.2.2   When the display shows n̄EEL:

- Press **ZERO** key to confirm, display will show all zeroes in the decimal format selected and start to blink the least significant digit.

- Enter the low limit weight value by using the **PRINT M+** **MR** keys to select the desired digit to change

- Press the **TARE** key to increment the weight value of the selected digit.

- Press the **ZERO** key when the desired weight value is displayed for the low limit weight value.

- Display will show n̄EEL.

- To escape from the settings menu and start the checkweighing procedure using weigh limits, press the **G/N** key.

8.2.3 For Checkweighing Using Pieces Settings:

8.2.3.1   When the display shows n̄EEH:

- Press **TARE** key to select, PCSH.

- Press **ZERO** key to confirm, display will show all zeroes and start to blink the least significant digit.

- Enter the high limit pieces value by using the **PRINT M+** **MR** keys to select the desired digit to change

- Press the **TARE** key to increment the pieces value of the selected digit.

- Press the **ZERO** key when the desired pieces value is displayed for the high limit pieces value.

- Display will show PCSH.

- Press **TARE** key to select PCSL.

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8.2.3.2   When the display shows `PCSL`:

- Press **ZERO** key to confirm, display will show all zeroes and start to blink the least significant digit.

- Enter the low limit pieces value by using the **PRINT M+** **MR** keys to select the desired digit to change

- Press the **TARE** key to increment the pieces value of the selected digit.
- Press the **ZERO** key when the desired pieces value is displayed for the low limit pieces value.
- Display will show `PCSL`.
- To escape from the settings menu and start the checkweighing procedure in the pieces limits, press the **G/N** key.

8.2.4. Set Check Weighing and Check Counting beep settings

- Press **G/N** and **UNIT** key together, display will be show `nEtH`.
- Press **TARE** key to select display `bEEP`.
- Press **ZERO** key to confirm, display will show last desired setting. It will be either `no`, `oh`, `or` `nh`

- **Check mode** `no` : No pulsing beep sound. Function turned off.

- **Check mode** `oh` : When the weight is between the limits. The OK led will illuminate and a pulsing beep will be sounded continuously.

- **Check mode** `nh` : When the weight is out of limits, a pulsing beep will be sounded continuously. The LO or HI led will be illuminated.

Note: Check weighing and check counting available only when weight exceeds 20d

8.3. Accumulation

The TLI Indicator can be set to accumulate manually by pressing the
PRINT M+ key. Refer to Parameters P1 and P2 in Section 6 of this manual for accumulation and printout options.

Before operation TLI Indicator should be stable and showing a zero value. Accumulation will begin after an applied weight of more than 20d.

8.3.1 Manual Accumulation Operation:

- Place the load on the platform.
- Press the **PRINT M+** key, when displayed weight is stable.
- The display will show ⌘CC 1 for 3 seconds then show the total weight of all accumulated values also for 3 seconds.
- Remove the weight from the platform.
- When display returns to a zero value and is stable, repeat the procedure for the second, third, etc. up to 99 different weight accumulations.

8.3.2 Automatic Accumulation Operation:

The TLI Indicator can be set to accumulate automatically. Refer to Parameters P1 in Section 6 of this manual for auto accumulation.

- Place the load on the platform.
- When the weight is stable, the display will show ⌘CC 1 for 3 seconds then show the total weight of all accumulated values also for 3 seconds.
- Remove the weight from the platform.
- When display returns to a zero value and is stable, repeat the procedure for the second, third, etc. up to 99 different weight accumulations.

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8.3.3 Memory Recall:

To recall the accumulated memory press the M R key.

Display will show ACC **n** (n: Total number of accumulations recorded) for 3 seconds then the display will show the total saved weight value for 3 seconds.

8.3.4 Memory Clear:

To clear the memory, press the PRINT M+ and the M R keys together.

Display will show ACC 0. All accumulation memory has been cleared.

8.4. Parts Counting

To enter the parts counting, press and hold the M R key. The display will show P 10.

8.4.1 <u>Parts Counting Operation</u>

- Press the TARE to select the correct amount of parts that will be put on the scale to calculate the piece weight. The parts quantity options are:

  P 10 ,P 20 ,P 50 ,P 100 , P200

- Place the correct amount of parts on the platform

- Press the ZERO key to confirm, display will show ---- until a stable weight is detected show a piece weight can be calculated.

- The TLI Indicator will show the quantity of pieces put on the platform.

- You can now add more parts to the platform, the TLI Indicator will update the display to show the new quantity on the platform.

- Press the M R key to exit the piece counting mode and return the TLI Indicator back to normal weighing mode.

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8.5 Animal Weighing

The TLI Indicator can be used for loads that will cause excessive vibration on the platform such as animal weighing. Refer to Parameters P4 in Section 6 of this manual to setup the Animal Weighing mode. When in the Animal Weighing mode, the display will show "HOLD" in the upper right corner.

8.5.1 Animal Weighing Operation

- Put the noisy load on the platform
- The TLI Indicator will perform a slower averaging of the weight to get a more stable reading.
- When the TLI Indicator calculates a weight, the display will show the locked value for a few seconds.
- You can add or remove loads. The TLI Indicator will update the weight and display it once it recalculates the new value.

- To enter or exit animal weighing mode, press the **TARE** and **ZERO** keys simultaneously.

9. RS-232 OUTPUT

The TLI Indicator comes standard with an RS-232 output.

9. 1. Basic Specifications:

RS-232 output of weight data
ASCII code
7/8 data bits
Parity selectable
Baud rate from 600bps to 9600bps

Connector: 9 pin socket
Pin 2: Serial Input
Pin 3: Serial Output
Pin 5: Signal Ground

Check weighing output (9 pin socket)
Pin 1 VB
Pin 4 vcc (5V)(output)
Pin 5 com (gnd) public
Pin 6 ok (output)
Pin 7 low (output)
Pin 8 hi (output)
Pin 9 beep (output)

9.1.1 Continuously Serial Output Protocol

Parameter 1 Section 6 of this Manual: Cont

		,			-/ ⊔								g l	g b	CR	LF
-HEADER1--		- HEADER2-				--- WEIGHT DATA --						UNITS			

HEADER1: ST=STABLE , US=UNSTABLE

HEADER2: NT=NET , GS=GROSS

9.2 Printing formats: Parameter 1 Section 6 of this Manual: Prt

LP-50: (DLP-50 Label Printer)	
Pr 0	2000/00/00 00:00 No. xx NET xxx kg TARE xxx kg GROSS xxx kg
Pr 1	NET xxx kg TARE xxx kg GROSS xxx kg
Pr 2	GROSS xxx kg Total xxx kg
Pr 3	NET xxx kg TARE xxx kg GROSS xxx kg Total xxx kg

STP103 / SRP275: Epson format	
Pr 0	Net xxx kg Tare xxx kg Gross xxx kg
Pr 1	Gross xxx kg Total xxx kg
Pr 2	Net xxx kg Tare xxx kg Gross xxx kg Total xxx kg
Pr 3	No. xx Net xxx kg Tare xxx kg Gross xxx kg Total xxx kg

SRP770:	
Pr 0	No. xx NET xxx kg TARE xxx kg GROSS xxx kg
Pr 1	NET xxx kg TARE xxx kg GROSS xxx kg
Pr 2	GROSS xxx kg Total xxx kg
Pr 3	NET xxx kg TARE xxx kg GROSS xxx kg Total xxx kg

TPuP: (TYJ-360-D printer)
No.   xx Net   xxx kg

10. MAINTENENCE

	⚠️ **WARNING**
	DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, CLEANING, OR SERVICING. FAILURE TO DO SO COULD RESULT IN BODILY HARM OR DAMAGE THE UNIT.

⚠️ **CAUTION**
• **Permit only qualified persons to service the instrument** • **Before connecting or disconnecting any components, remove the power.** • **Failure to observe these precautions bodily harm or damage to or destruction of the equipment.**

10.1 General

If the TLI Indicator does not operate properly, troubleshoot the problem if possible or contact Totalcomp for assistance in troubleshooting.

Determine whether the problem is constant or intermittent. Be aware that problems can be caused by mechanical or electrical influences.

Check the area for the following possible problems.
- Water
- Corrosive materials
- Vibrations or temperature or wind
- Physical damage

Check the TLI Indicator's cables for physical damage.
Check all connections and connecters for any loose contact or incorrect wiring.

10.2 Error Codes

The TLI Indicator may display one of the following error messages to assist in troubleshooting a problem.

Error Message	Description	Solution
◇ ◇ ◇ ◇ ◇	Maximum load exceeded	Unload or reduce weight
Err 4	Zero setting error	Zero setting range exceeded due to switching on.(4%max) Make sure platform empty.
Err 5	Keyboard error	Check the keys and connector.
Err 6	A/D value out of range	Make sure platform is empty and installed properly. Check the load cell connections.
Err 9	Unstable Reading	Check any air flow, building vibration, RF noise or mechanical touching on the platform. Check the load cell and connections.
Err 17	Tare out of range	Remove the load and restart scale again.
--oL--	Over range	Remove the load and re-calibrate
FAdH / FAdL	Calibration Error	Re-calibrate
Err P	Printer error	Check the printer and settings
bALo / LobA	Battery low	Re-charge battery, check the voltages.

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10.3 Determine the Problem

Determine whether the problem is in the TLI Indicator or the scale platform

- Remove power from the system, and disconnect the indicator from the platform
- Connect the indicator to a load cell simulator
- Turn on power to the TLI Indicator and test the TLI Indicator using the load cell simulator.
- If problem goes away, its source is probably in the platform. Check the load wiring, connecter, load cells and mechanical components of the platform.
- If problem persists, its source is probably in the indicator. Check the indicator voltages, connecters, cables and function programs.

10.4 Check the Load cell

- Remove power from the system, and disconnect the TLI Indicator from the platform
- Remove the load connecter from platform terminal.
- Check for moisture, or foreign material inside.
- Make sure all leads are connected and soldered correctly. See the details of connections in the Installation section.
- Check load cell for proper input and output resistances

Measuring Points	Resistance
+ Exc to –Exc (Input)	Minimum 350 ohms
+Sig to –Sig (Output)	347 ~ 353 ohms One Cell
+Sig to –Sig (Output)	172 ~ 178 ohms Two Cells
+Sig to –Sig (Output)	113 ~ 119 ohms Three Cells
+Sig to –Sig (Output)	84 ~ 90 ohms Four Cells

10.5 Check Indicator Voltages

If the problem is in the Indicator, use a DVM to check the following voltages

10.5.1 AC Power

Check the AC power at the wall outlet or supply voltage.
- Voltage must be a -20% and +10% of the normal AC voltage.

10.5.2 Adaptor Voltage

Check the adaptor output cable connector voltage
- Voltage must be minimum 9VDC and maximum 15VDC

10.5.3 PCB Input Voltage

Check the PCB input power connector voltage
- Voltage must be minimum 9VDC into the pin AD+

10.5.4 Check Battery Voltage and Charging Voltage

Check the Battery Voltage,
- Voltage must be minimum 6VDC. If below the 6VDC connect the adaptor for charging
- The battery voltage below the 5.5VDC, replace the battery and install new 6V/4Ah battery.

Check the Battery Charging Voltage;
- Remove the battery connection terminals (Red and Black) from the battery.
- Connect the power and turn on the Indicator
- Voltage into the terminal minimum 6.5VDC

10.6 Problems and Solutions

Problems	Possible cause	Common Solutions
Display is blank. No self-test	Mains power is turned off. Power supply faulty or not plugged. Internal battery is not charged. On/Off switch problem	Check power is getting inside the TLI Indicator and on/off switch is working. Verify the voltages, which are on the power supply label.
Blank display after self-test	Platform not installed. Unstable weight, load cell damaged	Check the platform is installed correctly. Try recycling the power on the TLI Indicator.
OL or -------	Maximum capacity exceeded. Load cell or mechanics damaged. Power supply faulty	Check the platform is installed correctly. Try recycling the power on the TLI Indicator. Repeat the calibration procedure.

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------- or NULL displayed	Weight is on the platform is below permissible limit. Pan not installed correctly. Power supply faulty. Load cell or mechanism faulty	Check the platform is installed correctly. Try to turn on the scale again. Do the calibration again
Display is unstable	Goods touching somewhere. Air variation or any vibrations. Temperature changed. Load cell or connections faulty. Power supply faulty	Check the scale is in acceptable location. Check the connecters and load cell. Check the power supply and battery
Weight value incorrect	Calibration error. Platform of load cell touching somewhere. Wrong weighing unit	Use accurate weight for to do the calibration Check the pan and load cell is installed proper and touching. Check the parameter settings. Check the load cell and connecters
Cannot use full capacity	Over load protection stoppers or transport locks are not removed. Parameters are set incorrectly. AD problem. Load cell or mechanism damaged	Check the stoppers and locks under the platform. Check the weighing unit and parameter settings. Check the load cell.
Platform Corner Weight different	Over load protection stoppers or transport locks are not removed. Load cell or mechanism damaged	Check the stoppers and locks under the platform. Use accurate weight for to do the calibration Check the load cell.
Battery not charging	Mains voltage problem Charging circuit problem Battery Problem	Check the mains and adaptor. Check the battery. Check the charging circuit

11. TROUBLE SHOOTING

11.1 No Power

```
          ┌──────────────┐
          │    START     │
          └──────────────┘
                 │
                 ▼
    ┌──────────────────┐   Not good   ┌────────────────────────┐
    │ Check power      │─────────────▶│ Replace power switch or│
    │ switch           │              │ connecter              │
    │ connector        │              └────────────────────────┘
    └──────────────────┘
          Ok │
             ▼
    ┌──────────────────┐   Not good   ┌────────────────────────┐
    │ Check Battery    │─────────────▶│ Recharge the battery or│
    │ Voltage >6V      │              │ Replace the battery    │
    └──────────────────┘              └────────────────────────┘
          Ok │
             ▼
    ┌──────────────────┐   Not good   ┌────────────────────────┐
    │ Check DU 4       │─────────────▶│ Check DU4 and around   │
    │ pin 1 Output 5V  │              │ circuit                │
    └──────────────────┘              └────────────────────────┘
          Ok │
             ▼
    ┌──────────────────┐   Not good   ┌────────────────────────┐
    │ CHK M/B DU3      │─────────────▶│ Check M/B DU3 and      │
    │ pin 8 high level │              │ around circuit         │
    │ when power on    │              └────────────────────────┘
    │ and return to    │
    │ low level later. │
    └──────────────────┘
          Ok │              Not good   ┌────────────────────────┐
             │             ─────────────▶│ Check ST and around   │
             ▼                         │ circuit                │
    ┌──────────────────┐              └────────────────────────┘
    │ Check ST         │
    │ (11.0592Mhz)     │
    └──────────────────┘
          Ok │
             ▼
    ┌──────────────────┐
    │ Check M/B DU1    │
    │ and around       │
    │ circuit          │
    └──────────────────┘
```

11.2 No Display

```
┌─────────────────┐
│      START      │
└────────┬────────┘
         │
         ▼
┌─────────────────┐   Not good   ┌─────────────────────┐
│ Check LCD       │─────────────▶│ Replace LCD or      │
│ break or loose  │              │ connect proper      │
│ contact         │              └─────────────────────┘
└────────┬────────┘
      Ok │
         ▼
┌─────────────────┐   Not good   ┌─────────────────────┐
│ Check the cable │─────────────▶│ Replace the cable or│
│ from main board │              │ connect proper      │
│ to display board│              └─────────────────────┘
└────────┬────────┘
      Ok │
         ▼
┌─────────────────┐   Not good   ┌─────────────────────┐
│ Check U3        │─────────────▶│ Replace IC power    │
│ pin 17 Output   │              │ problem             │
│ 5V              │              └─────────────────────┘
└────────┬────────┘
      Ok │
         ▼
┌─────────────────┐   Not good   ┌─────────────────────┐
│ Press key       │─────────────▶│ Check U1 and around │
│ board beeper    │              │ circuit             │
│                 │              └─────────────────────┘
└────────┬────────┘
      Ok │               Not good  ┌─────────────────────┐
         │              ──────────▶│ Check ST and around │
         ▼                         │ circuit             │
┌─────────────────┐                └─────────────────────┘
│ Check U3 and    │
│ LCD             │
└─────────────────┘
```

11.3 Battery not charging

```
                    ┌─────────────────┐
                    │      START      │
                    └─────────────────┘
                             │
                             ▼
        ┌─────────────────┐        ┌──────────────────────────┐
        │ Check Battery   │  Yes   │                          │
        │ Voltage < 5V    │───────▶│   Replace Battery        │
        │                 │        │                          │
        └─────────────────┘        └──────────────────────────┘
              No │
                 ▼
        ┌─────────────────┐ Not good ┌──────────────────────────┐
        │ Check Adaptor   │          │                          │
        │ output 9.5 V.   │─────────▶│  Check the adaptor or    │
        │ without connect │          │  replace adaptor.        │
        │ the scale       │          │                          │
        └─────────────────┘          └──────────────────────────┘
           Ok    │
                 ▼
        ┌─────────────────┐ Not good ┌──────────────────────────┐
        │ Check C1 +9 V   │          │  Check BR, C1, C2 and    │
        │                 │─────────▶│  around circuit          │
        │                 │          │                          │
        └─────────────────┘          └──────────────────────────┘
           Ok    │
                 ▼
        ┌─────────────────┐ Not good ┌──────────────────────────┐
        │ CHK M/B U5      │          │                          │
        │     pin2        │─────────▶│  Check M/B DU5 and       │
        │ Output > 7V.    │          │  around circuit          │
        └─────────────────┘          └──────────────────────────┘
           Ok    │
                 ▼
        ┌─────────────────┐
        │ Check M/B D1,   │
        │ R1 and around   │
        │ circuit         │
        └─────────────────┘
```

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11.4 Not Weighing

```
                    ┌─────────────────┐
                    │     START       │
                    └────────┬────────┘
                             │
                             ▼
    ┌─────────────────┐           ┌─────────────────┐           ┌──────────────────┐
    │ Check can show  │   Yes     │ Add load on the │   Yes     │ Do calibration   │
    │ internal counts ├──────────▶│ pan, check the  ├──────────▶│                  │
    │                 │           │ counts increase │           └──────────────────┘
    └────────┬────────┘           └────────┬────────┘
             │ Ok                          │
  Not good   │                             ▼
 ┌───────────┘           ┌──────────────────────────┐
 │                       │ Check the load cell input │
 ▼                       │ circuit                   │
┌─────────────────┐      └──────────────────────────┘
│ Check M/B AU1 pin│
│ 15: 5V           │
└────────┬────────┘
```

Check power circuit

Check M/B AU1 pin 15: 5V — Ok

Add load on pan, CHK output between M/B AU1 pin1 and pin2 signal change (mV) — No

Not good → Check M/B AU1 and around circuit

Not good → Check load cell and around circuit

11.5 Unstable

```
                    ┌─────────────────┐
                    │      START      │
                    └─────────────────┘
                             │
                             ▼
        ┌──────────────────┐      Yes    ┌──────────────────┐
        │ Check after warm │ ──────────▶ │ Humidity         │
        │ up               │             │                  │
        └──────────────────┘             └──────────────────┘
                 │
            No   │
                 ▼              Yes
        ┌──────────────────┐      ┌──────────────────┐
        │ Check load cell  │ ────▶│ Sole the touching│
        │ and bracket      │      │ problem          │
        │ touching         │      │                  │
        │ something        │      └──────────────────┘
        └──────────────────┘
                 │
                 ▼
        ┌──────────────────┐
        │ Check M/B AU1    │
        │ and around circuit│
        └──────────────────┘
```

12. AVAILABLE OPTIONS

- **AL-01E LED color changing light tower**
- **TYJ-360-D Roll paper printer**
- **DLP-50 direct thermal label printer**
- **Epson TMU-295 Ticket printer**
- **Epson TMU-220 Roll paper printer**

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13. ANALOG OUTPUT INSTALLATION
Analog output installation and adjustment guide

1. Open the TLI indicator using socket wrench (remove 3 screws on top and 3 screws on bottom only). Locate J1 black pin socket on PCB. Insert analog output card into TLI indicator PCB pinhole socket J1, use 2 screw to fix this PCB to make sure it stays secure in socket.
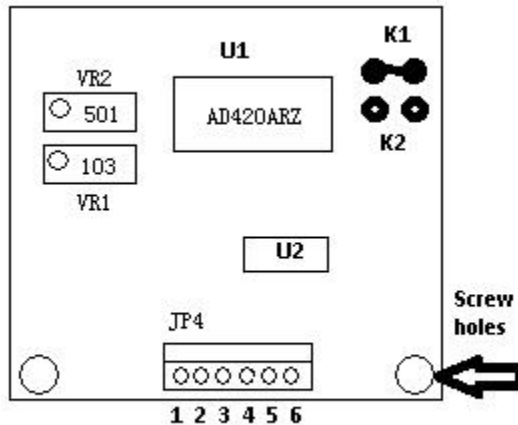   On the analog option board make sure that K1 pins for 0-20mA or 4-20mA is closed, for 0-10VDC make sure that K2 pin is closed or connected.

2. Connect external power supply (10-32VDC) positive (+) to connector JP4 pin 5, connect external power supply negative (GRD) to JP4 pin 6.

1. **For 4-20mA**, connect JP4 pin 1 as **output +**, connect JP4 pin 2 as **output - (GRD)**. External power supply should be connected to JP4 pin 5 as **input +**, and pin 6 as **input –** (GRD).

2. **For 0-10VDC** connect JP4 pin 3 as **output +**, connect JP4 pin 3 as **output -**. External power supply should be connected to JP4 pin 5 as **input +**, and pin 6 **as input-**.

4. Calibrate the scale first then add 10-32VDC power on analog output card (external power source), check when the scale is at zero point the output will be 4mA or 0mA for **mA** output, or 0VDC for **VDC** output if the output is incorrect, please adjust **VR1** (10K) for zero point, then apply load to the scale and measure analog output if adjustment needed adjust **VR2** (500Ω) for span 20mA or 10VDC maximum output.

5. After adjusted, we recommend you to use drop of paint to fix VR1 and VR2

Note:
1. The both VR potentiometers already been adjusted at the factory, please don't adjust the VR if it's not necessary.

14.CONNECT TO LIGHT TOWER

9 PIN Connector	8 Wired Cable (Color)	Main board
PIN 1	Brown	VB
PIN 5	Black	GND
PIN 6	Green	OK
PIN 7	Yellow	LOW
PIN 8	Red	HI
PIN 9	Gray	BUZZ

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The TLI indicator can be used for a variety of applications:

- Counting scales for general industrial and warehouse applications.
- Digital weighing/check-weighing scales.
- High performance platform scales with extensive software facilities including parts counting, percent weighing etc.
- Digital electronic scales for medical use.
- Retail price computing scales.
- Floor scales.
- Truck scale.
- Crane scales.
- Weighing indicator for platform scales, floor scales and truck scales.
- Hand push and pull gauge.
- Customize auto weighing systems.
- With light tower option it is a great product for hearing impaired people.

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