Operation Manual

TPD

## Interface Scale

V1.3

CONTENTS

1. INTRODUCTION

- The TPD series interface scale that amplifies signals from a load cell, converts it to digital data and displays it as a mass value
- It is suitable for general weighing applications
- 15 mm LCD with white LED back light display
- Standard RS232 port can be connected to computer, ECR or POS
- Capacity 6 kg to 30 kg (12 lb to 60 lb)

2. INSTALLATION

2.1 Installation

- Remove transport lock from bottom of the scale base
- Place the scale on a level surface
- Install the stainless steel pan on top of the plastic pan
- Insert the pole (1) to pole bracket (3)
- Fixing the pole(1) with screw (2)

1

2

3
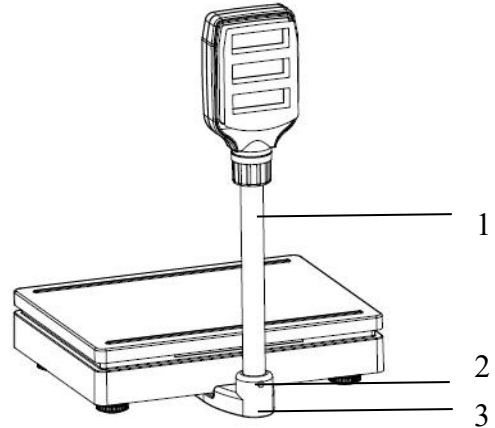
2.2 Leveling

- The scale is equipped with a level indicator located back side of device.
- Use the adjustable leveling feet located on the bottom of the scale until the bubble appears in the center of the indicator.

Level bubble

Not Level   Level
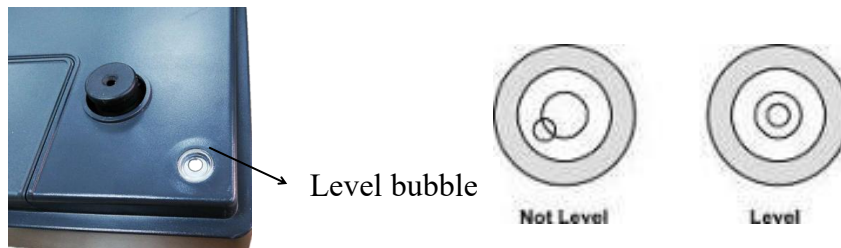
2.3 Power Connection
- Connect the adaptor pin into the indicator adaptor jack.
  Adaptor jack is locating below the left side of the scale.
- Adaptor connects into your AC power socket. Plugable equipment must be installed near an easily accessible socket outlet with a protective ground/ earth contact.

2.4 Rechargeable battery operation
Note: Please charge the battery before using the scale for the first time.
- The symbol BATT on the weight display indicates that the battery is getting low.
  it's time to charge the battery with the AC power. If scale goes on being used without proper charging, <BAT-LO> words will flicker on the display.
- Approximately 1 hours of instrument usage are left; afterwards it will shut off automatically.

- Please use the supplied battery charger for charging the battery immediately,or scale cannot be used.

2.4.1 Charging the battery
- Before the first use, the battery should be charged by connecting it to the mains power supply for at least 10 hours.
- When the scale is plugged into the mains power the internal battery will be recharged.
- Verify that the AC power socket outlet is properly protected.
- Right side of the weight display there is an charging LED to indicate the status of battery charging
- Charge status of rechargeable battery is indicated by the LED display.
   Red: Charging storage battery
   Green: Rechargeable battery is completely charged

2.4.2 Battery maintenance
- Do not use any other type of power adaptor than the one supplied with the scale.
- Recharge battery should be charged in every three months when not in use.
- If the scale is not used for an extended period of time,remove the battery from the battery compartment to avoid leakage.
- Store the battery in a sealed bag or box in a dry, temperate environment.

3. KEYS DESCRIPTION

Max 60 lb / 960 oz / 30 kg   Min 0.2 lb / 4 oz / 0.1 kg   d= 0.01 lb / 0.2 oz / 0.005 kg

lb
oz
kg

STABLE ZERO NET   ✳ BATT   CHARGE ●   VISIONTECH SHOP

Keys	Description
ZERO ON/OFF	1)On/Off key,Used to switch on/off the scale. 2)Zero key,Used to clear and zero the display. 3) Enter key, Used to confirm selection in parameters option. 4)Left arrow key. Used to shift the location and move the digit to the left.
TARE	1)Tare key,Used to perform a tare function, Subtracts weights. 2)Value increment key. Used to change the selected digit value. 3)Set up key,Used to enter setup menu setting. 4)To change the menu option in menu setting.
UNIT	1)Units key,Used to change weighing units(kg/lb/oz).

4. DISPLAY SYMBOLS
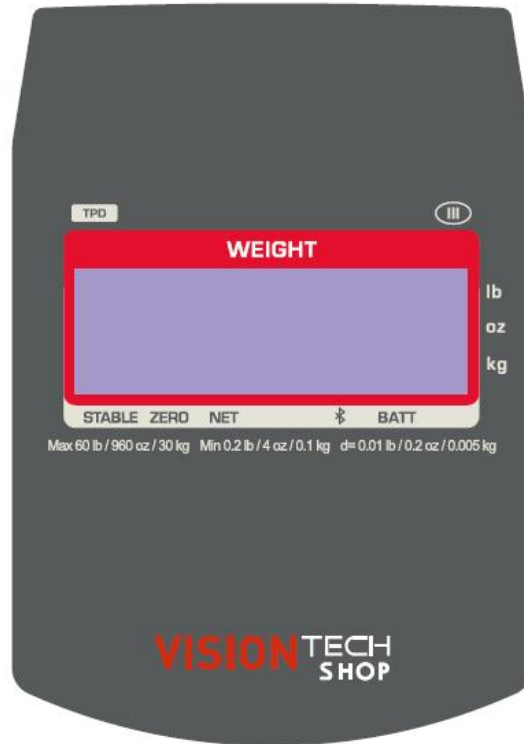
CHARGE	Charging indicator,indicates scale has been connected with power
STABLE	Stable indicator. Indicates the scale weight is stable.
NET	Net indicator. Indicates scale is displaying the net weight.
ZERO	Zero indicator.Indicates the scale is at zero.
kg	Indicates the unit of measure in use (kilogram).
lb	Indicates the unit of measure in use (pounds).
oz	Indicates the unit of measure in use (ounces).
✳	Bluetooth indicator,Indicates the scale is in Bluetooth mode
BATT	Battery low indicator,Indicates the battery need to be charged

5. OPERATION

5.1 Switching on/off

- Switch on the scale by pressing [ZERO ON/OFF] key,Display will be show the scale version and then come to normal weighing mode.

- To switched off the scale, press [ZERO ON/OFF] key again.

5.2 Zeroing

Environmental conditions can lead to the balance exactly zero in spite of the platform not taking any strain. However, you can set the display of your balance to zero any time by

pressing [ZERO ON/OFF] key and therefore ensure that the weighing starts at zero.

5.3 Using Tare

To enable Tare function, it's required to enter parameters to select f4 tare >ON, Before access to the parameter,it need to press the calibration switch that is locating below the scale.

 The weight of any container can be tared by pressing [TARE] button so that with subsequent weighing the net weight of the object being weighed is always displayed.

Taring a container

- Load weight on the platform.

- Press [TARE] key. Zero is displayed, and tare is subtracted. The [▼] indicator above Net indicator appears.
- Remove weight on the platform. Tared weight is displayed. It can set only one tare value. It will be shown with a minus value.

Clearing tare

- To clear the tare value, remove the load from the platform

- Press [TARE] key. Zero is displayed, The [▼] indicator above Net indicator disappears ,tare weight is cleared.

5.4 Select Weighing Units

By pressing [UNIT] key in turn in normal weighing mode,it can convert the weighing units (kg/lb/oz),the relative symbol will turn on in the display.

5.5 Back light Setting

It allows choosing the back light operation.

1　Press [TARE] key during that start up ,display will be show "*FO bL*"

2　Press [ZERO ON/OFF] key to enter.

3　Press [TARE] key to change the settings back light display mode
to Auto/Off/On.

4　Press [ZERO ON/OFF] key to confirm.

Display	Description
AUTO	Backlight will be turned on, when start to use or when weight is not in zero.
oFF	Backlight function will be turned off
on	Backlight will be always turned on

Note:If battery is getting low, the backlight function will not available

5.6 Power auto off

1　Press [TARE] key during that start up ,display will be show "*FO bL*".

2　Press [TARE] key to select the menu until display show **"*F I oFF*".**

3　Press [ZERO ON/OFF] key to confirm.

4　Press [TARE] key to select the options.

F1 OFF	**off**	To set auto off function turn off, for scale always on
	3	Set to turn off 3 minutes later
	10	Set to turn off 10 minutes later
	30	Set to turn off 30 minutes later

5.7 Bluetooth Operation (Optional)

5.7.1 Bluetooth Testing Tool Installation

Note: The following steps used for testing communication (only BLE Utility available for testing)

- Turn on the BLE Utility software [BLE icon] in your phone, it can be download from AppGallery
- Scale should be in the allowed limits of the distance to connect Bluetooth.

5.7.2 CON1 Communication Protocol Testing

1   Turn on the scale.

2   Press [TARE] key during that start up ,display will be show "*F0 bL*".

3   Press [TARE] key until display show **"*F2 Con*".**

4   Press [ZERO ON/OFF] key to confirm,display will be show "*bt*"

5   Press [ZERO ON/OFF] key to enter,display will be show "*Con 1*"

6   Press [ZERO ON/OFF] key to confirm,display show **"*F2 Con*".**

7   Press [TARE] key to select "*bACk*" option.

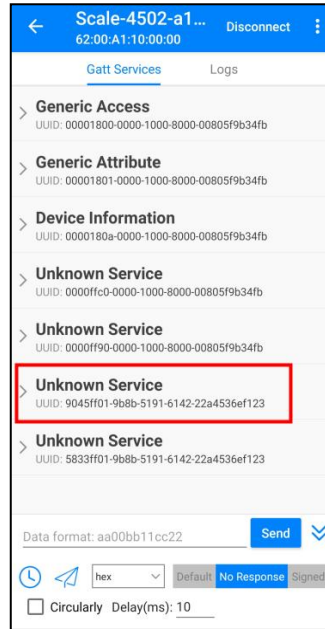8   Press [ZERO ON/OFF] key to confirm and back to normal weighing mode.

Testing steps in the mobile phone

1   Tab the connect button in your mobile phone to connect the Bluetooth module

2   Select the Unknown Service the last but one

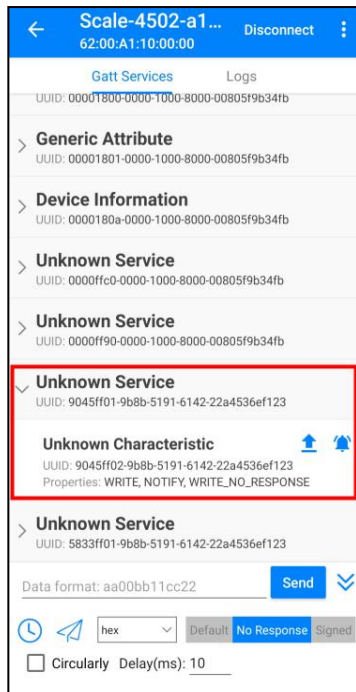3   Tab it and turn on the icon,Once set it successfully ,The [▼] indicator above[✷] Bluetooth indicator in the scale appears.

4   Tab logs ,the weighing data will be show

①

②

③
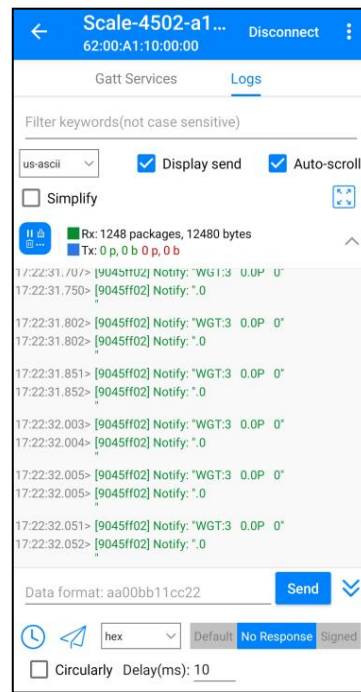
④

5.7.3 CON2 Communication Protocol Testing

1   Turn on the scale.

2   Press [TARE] key during that start up ,display will be show "FO bL"

3   Press [TARE] key until display show "F2 Con"

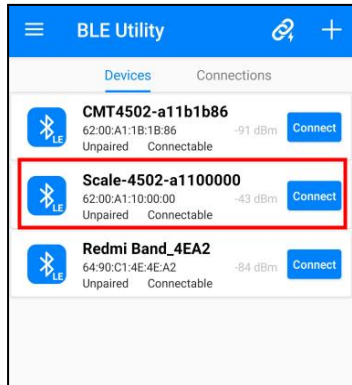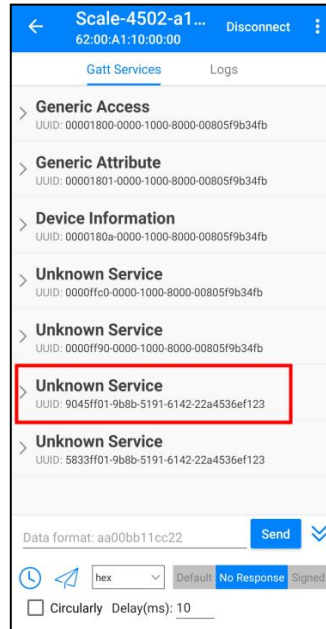4   Press [ZERO ON/OFF] key to confirm,display will be show "bt"

5   Press [ZERO ON/OFF] key to enter,display will be show "Con 1"

6   Press [TARE] key to select "Con 2"

7   Press [ZERO ON/OFF] key to confirm,display show "StA"

8   Press [ZERO ON/OFF] key to confirm

9   Press [TARE] key to select "bACK" option

10   Press [ZERO ON/OFF] key to confirm and back to normal weighing mode.

Testing steps in the mobile phone

1   Tab the connect button in your phone to connect the Bluetooth module.

2   Select the Unknown Service the last but one .

3   Tab it and turn on the icon,Once set it successfully ,The [▼] indicator above[✳]

    Bluetooth indicator in the scale appears .

4   Tab logs ,the weighing data will be show.

①

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③
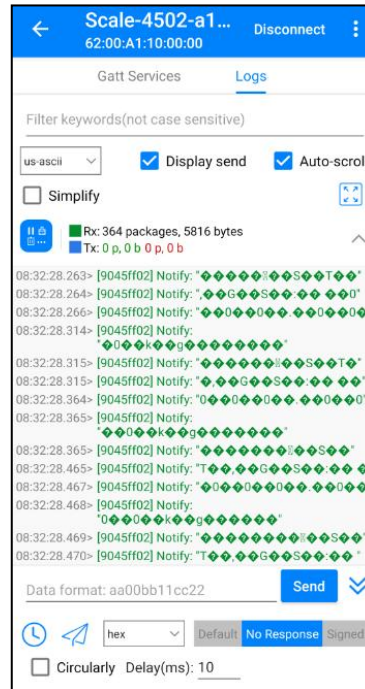
④

5.7.4 ASK Command Testing

1   Turn on the scale.

2   Press [TARE] key during that start up ,display will be show "*FO bL*".

3   Press [TARE] key until display show **"*F2 Con*".**

4   Press [ZERO ON/OFF] key to confirm,display will be show "*bt*"

5   Press [ZERO ON/OFF] key to enter,display will be show "*Con 1*"

6   Press [TARE] key until display show "*ASt*"

7   Press [ZERO ON/OFF] key to confirm,display show **"*F2 Con*".**

8   Press [TARE] key to select "*bACt*" option.

9   Press [ZERO ON/OFF] key to confirm and back to normal weighing mode.
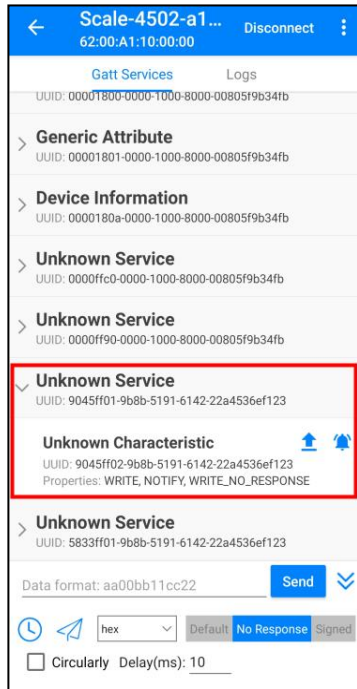
Testing steps in the mobile phone

1   Tab the connect button in your phone to connect the Bluetooth module

2   Select the Unknown Service the last but one

3   Tab it and turn on the icon,Once set it successfully ,The [▼] indicator above[�֎] Bluetooth indicator in the scale appears.

4   Tab logs and Entered the Command to receive the corresponding data

   Command W: read data
   Command TARE: Tare
   Command ZERO: Zero
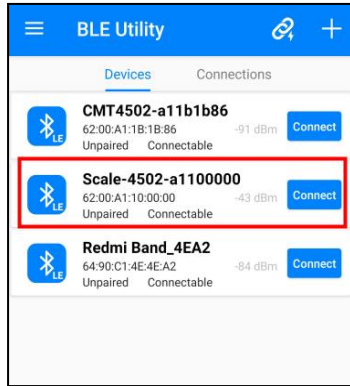
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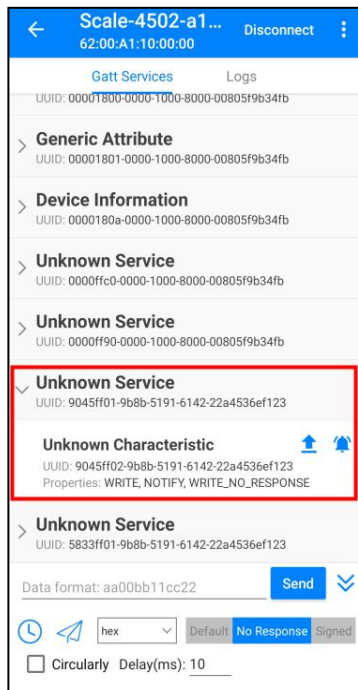
③
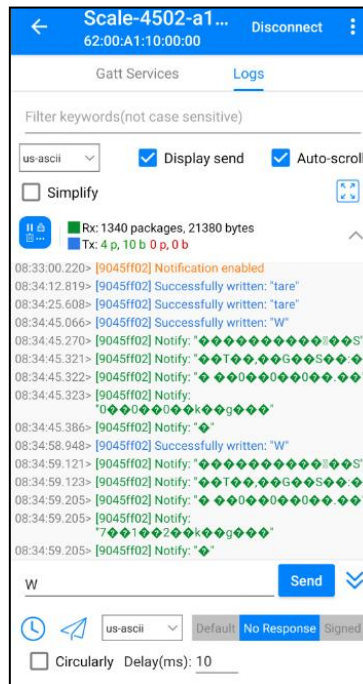
④

5.8 POS/ECR protocol selection

1   Turn on the scale.

2   Press [TARE] key during that start up ,display will be show "*FD bL*"

3   Press [TARE] key until display show "*F2 Con*"
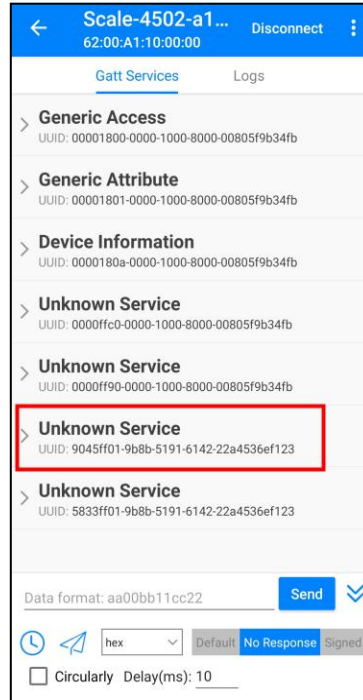
4   Press [ZERO ON/OFF] key to confirm,display will be show "*bt*"

5   Press [TARE] key to select "*Port*" option

6   Press [ZERO ON/OFF] key to confirm,display show "*oFF*"

7   Press [TARE] key until display show "*CAS 2*"

8   Press [ZERO ON/OFF] key to confirm

9   If necessary, Press [TARE] key to select protocol from type 0 ~ type 6 (TYPE 0,2,4,5,6)

10 Press [ZERO ON/OFF] key to confirm,display show "*F2 Con*"

11 Press [TARE] key to select "*bACk*" option

12 Press [ZERO ON/OFF] key to confirm and back to normal weighing mode.

6 PARAMETER SETTING

Enter into the Menu

- Press [TARE] key during that start up ,display will be shown **"FO bL"**

Enter to Selected Menu

- Press [ZERO ON/OFF] , it can confirm which will be shown displayed.

Select the Menu

- Press [TARE] key to choose menu block one by one.

Return to Weighing Mode

- Press [TARE] key to select "bACᵏ" option in parameters to escape from the menu and back to normal weighing mode.

To access the technical parameters F4 TARE & TECH,it's required to press the calibration switch, switch is locating below the scale
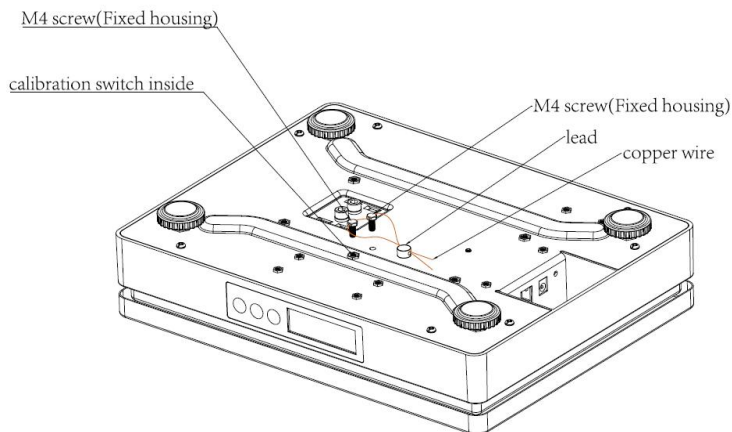
6.1 MENU BLOCK

Menu	Sub-Menu			Description
FO bL	*oFF*			To set backlight function
	on			
	AUto			
F1 oFF	*oFF*			Auto off function disable
	3			Scale will be auto off three minutes later
	10			Scale will be auto off 10 minutes later
	30			Scale will be auto off 30 minutes later
F2 Con	*bt*	*Con 1*		Continuous Protocol 1
		Con 2	*CoUt*	Continuous Protocol 2
			StA	Send stable weighing data
		CAS	*ACt*	CAS Active Protocol
			PAS	CAS Passive Protocol
		ASt		Ask mode 1) Command W: read data 2) Command TARE: Tare 3) Command ZERO: Zero
		oFF		Bluetooth Communication port off
		CAS 2		N.A
	Port	*Con 1*		Continuous Protocol 1
		Con 2	*CoUt*	Continuous Protocol 2
			StA	Send stable weighing data
		CAS	*ACt*	CAS Active Protocol
			PAS	CAS Passive Protocol
		ASt		Ask mode 1) Command W: read data 2) Command TARE: Tare 3) Command ZERO: Zero
		oFF		RS232 Communication port off
		CAS 2	*tYPE 0*	CAS POS /ECR protocol
			tYPE 2	
			tYPE 4	
			tYPE 5	
			tYPE 6	
F3 iSn	To show the internal counts			
F4 tArE	*oFF*	To disable tare function		
	*on	To enable tare function		
tECH	For any approved version,it's required to press the calibration switch			
	APProu	*CPA*		CPA approval
		o imL		OIML approval

		nEEP	NTEP approval
		nonE	None approval
		SLS ı	SLSI approval
	P1 CAL	CAL ʰG	Calibration
		CAL Lb	
	P2 rES	3000\3000r\ 3000 ı/6000	Set external resolution
	P3 CAP	6ʰG (12 Lb)	Set Scale Capacity
		12ʰG(30 Lb)	
		30ʰG(60 Lb)	
	P4 GrA		Set the local gravity
	P5 SEA	on	Multi-Tare operation enable
		oFF	Multi-Tare operation disable
bACʰ	Escape from setting menu and back to normal weighing mode		

Note: To calibrate in "kg" or "lb" unit, capacity will be show in kg or lb values.

Default setting is marked by *

7. DIAGRAM: Serial interface
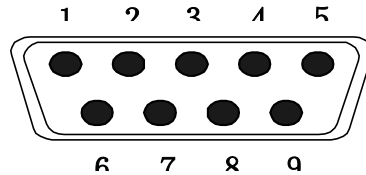
Pin 2	RXD	Input	Receiving data
Pin 3	TXD	Output	Transmission data
Pin 5	GND	—	Signal ground

9pin D Connector:

Scale		**Computer**
Pin 2	——————	Pin 3
Pin 3	——————	Pin 2
Pin 5	——————	Pin 5,7
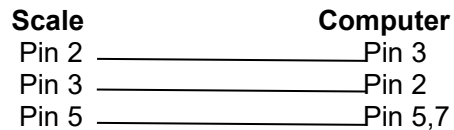
8. SPECIFICATION

MODEL	TPD-12	TPD-30	TPD-60
Maximum Capacity	12 lb / 6 kg / 192 oz	30 lb / 12 kg /480 oz	60 lb / 30 kg / 960 oz
Minimum Capacity	0.04 lb / 20 g / 1 oz	0.1 lb / 40 g / 2 oz	0.2 lb / 100 g / 4 oz
Readability	0.002 lb/0.001 kg/0.05 oz	0.005 lb/0.002 kg / 0.1 oz	0.01 lb / 0.005 kg / 0.2 oz
Max. Divisions	1/6000		
Weighing Units	kg/lb/oz		
Front Display	0.59inch /15mm digits LCD Display with white LED back Light		
Rear Display	1 LCD Display with white LED back Light		
Platter size	13.6 x 10.4 inch / 343 x 263mm		
Housing	Plastic housing (steel base) with stainless steel pan		
Interface	RS232 Output standard		
Operation Temperature	14°F - 104°F / -10°C - + 40°C		
Power	Input AC 100-240V, output DC 12V/500mA 6V/3.2Ah rechargeable battery		
Battery life	Approx. 48 hours with Bluetooth and backlight of continuous use Approx. 52 hours with Bluetooth or backlight of continuous use Approx. 68 hours without Bluetooth or backlight of continuous use		
Keypad	3 membrane keys		
Dimensions (inch/mm)	13.6 (W) x 12.7 (D) x 18.9 (H) / 345 (W) x 322.5 (D) x 478.8 (H)		
Net weight	10.1lb (4.6 kg)		
Gross weight	11.5lb (5.2 kg)		
Approvals	NTEP: Certificate No.22-010		

9. DIMMENSIONS(inch/mm)
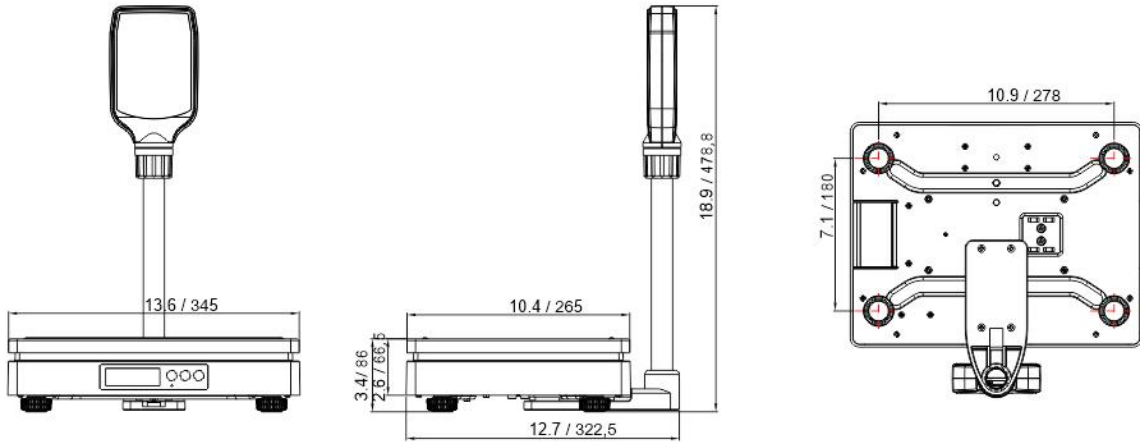
10.ERROR MESSAGE

Error Message	Description	Solution
Err 4	Zero setting error	Zero setting range exceeded due to switching on.(4%max) Make sure platform empty.
Err 6	A/D value out of range	Make sure platform empty and check the pan is installed proper. Check the load cell connectors.
--oL--	Over range	Remove the load. Re calibrate
FA iL	Calibration Error	Check the calibration weight and re calibrate