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VISION TECH SHOP TPD Series TPD-12 Interface Scale User Manual

VISIONTECH
SHOP

Operation Manual
**TPD Interface Scale**
V1.1

Contents

INTRODUCTION

- The TPD series interface scale 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 backlight display
- Standard RS232 port can be connected to the computer, ECR or POS
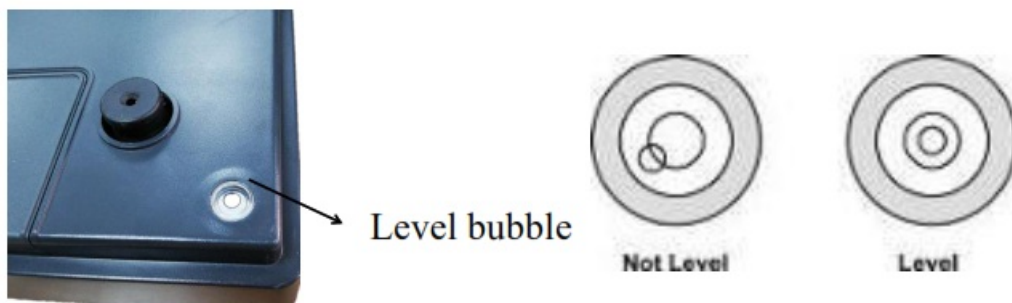
- Capacity 6 kg to 30 kg (12 lb to 60 lb)

INSTALLATION

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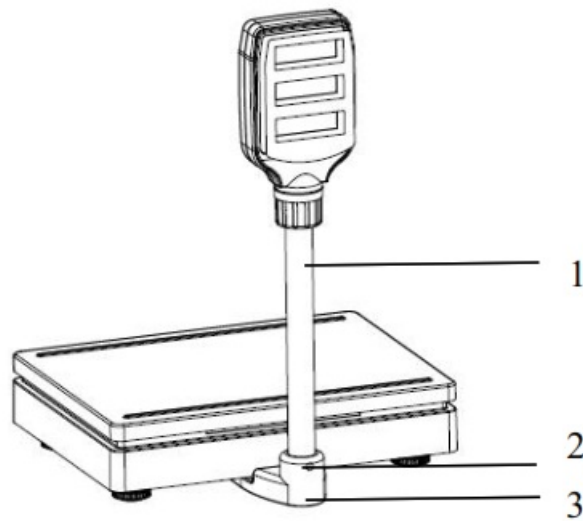
- Remove the transport lock from the bottom of the scale base
- Place the scale on a level surface
- Install the stainless steel pan on top of the plastic pan
- Insert the pole (1) to pole bracket (3)
- Fixing the pole(1) with screw (2)

2.2 Leveling

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

2.3 Power Connection

- Connect the adaptor pin to the indicator adaptor jack. The adaptor jack is located below the left side of the scale.
- Adaptor connects to 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 the scale goes on being used without proper charging, <BAT-LO> words will flicker on the display.
- Approximately 1 hour of instrument usage is left; afterward, it will shut off automatically.
- Please use the supplied battery charger for charging the battery immediately, or the scale cannot be used.

2.4.1 Charging the battery

- Before the first use, the battery should be charged by connecting it to the main 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.
- On the right side of the weight display, there is a charging LED to indicate the status of battery charging
- The charge status of the 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.
- The recharged battery should be changed 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.

KEYS DESCRIPTION

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 l
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 the menu setting.
unit	1)Units key, Used to change weighing units(kg/lb/oz).

DISPLAY SYMBOLS

CHARG F	Charging indicator indicates scale has been connected with the power
STABLE	Stable indicator. Indicates the scale weight is stable.
NET	Net indicator. Indicates the scale is displaying the net weight.
ZERO	Zero indicators. 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 needs to be charged

OPERATION

5.1 Switching on/off

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

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

5.2 Zeroing
Environmental conditions can lead to the balance of exactly zero in spite of the platform not taking any strain.

However, you can set the display of your balance to zero at any time by pressing [ZERO ON/OFF] the key and therefore ensure that the weighing starts at zero.

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

The weight of any container can be tared by pressing a [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), and the relative symbol will turn on in the display.

5.5 Backlight Setting

It allows choosing the backlight operation.

1. Press [TARE] the key during that start-up, and the display will be showing "F0 BL"

2. Press [ZERO ON/OFF] key to enter.

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

4. Press [ZERO ON/OFF] key to confirm.

Display	Description
AUTO	Backlight will be turned on, when starting to use or when weight is not at zero .
oFf	Backlight function will be turned off
on	Backlight will be always turned on

Note: If the battery is getting low, the backlight function will not be available
5.6 Power auto off

1. Press [TARE] key during that start-up, and the display will show "FO bL".

2. Press [TARE] key to select the menu until the display show "F1 OFF".

3. Press [ZERO ON/OFF] key to confirm.

4. Press [TARE] key to select the options.

	off	To set the auto-off function to turn off, for scale always on
FI OFF	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 are used for testing communication (only BLE Utility is available for testing)

- Turn on the BLE Utility software [BLE] in on your phone, it can be downloaded 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, and the display will be showing "*F0 bL*".
3. Press **TARE** the key until the display shows "*F2 Con*".
4. Press **ZERO ON/OFF** the key to confirm, the display will be show "*bt*"
5. Press **ZERO ON/OFF** key to enter, and the display will show "*Con 1*"
6. Press **ZERO ON/OFF** the key to confirm, and the display shows "*F2 Con*".
7. Press **TARE** the key to select the "*bACk*" option.
8. Press **ZERO ON/OFF** key to confirm and back to normal weighing mode.
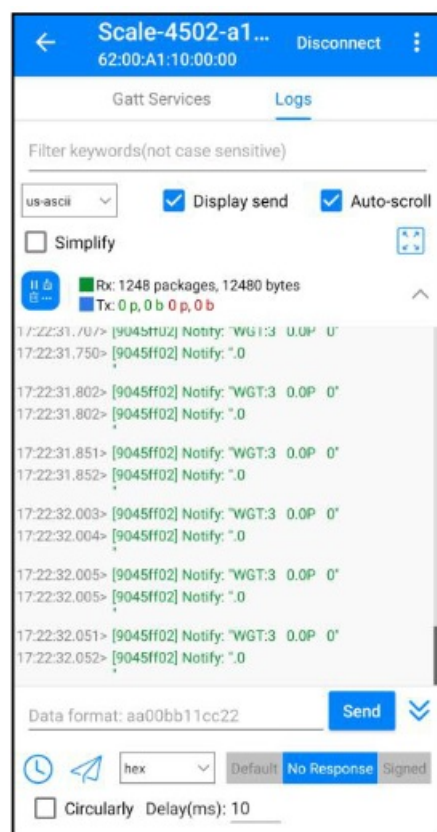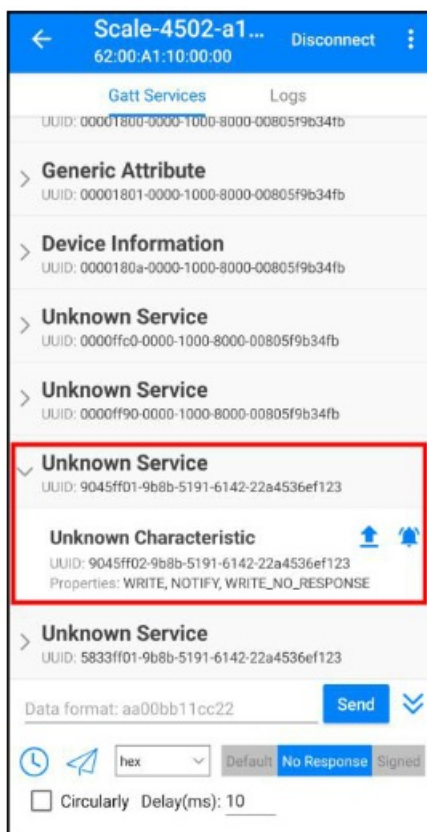
Testing steps in the mobile phone

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 shown

BLE Utility

Devices   Connections

CMT4502-a11b1b86
62:00:A1:1B:1B:86   -91 dBm   Connect
Unpaired   Connectable

Scale-4502-a1100000
62:00:A1:10:00:00   -43 dBm   Connect
Unpaired   Connectable

Redmi Band_4EA2
64:90:C1:4E:4E:A2   -84 dBm   Connect
Unpaired   Connectable

Scale-4502-a1...   Disconnect
62:00:A1:10:00:00

Gatt Services   Logs

Generic Access
UUID: 00001800-0000-1000-8000-00805f9b34fb

Generic Attribute
UUID: 00001801-0000-1000-8000-00805f9b34fb

Device Information
UUID: 0000180a-0000-1000-8000-00805f9b34fb

Unknown Service
UUID: 0000ffc0-0000-1000-8000-00805f9b34fb

Unknown Service
UUID: 0000ff90-0000-1000-8000-00805f9b34fb

Unknown Service
UUID: 9045ff01-9b8b-5191-6142-22a4536ef123

Unknown Service
UUID: 5833ff01-9b8b-5191-6142-22a4536ef123

Data format: aa00bb11cc22   Send

hex   Default No Response Signed

Circularly Delay(ms): 10

Scale-4502-a1...   Disconnect
62:00:A1:10:00:00

Gatt Services   Logs

UUID: 00001800-0000-1000-8000-00805f9b34fb

Generic Attribute
UUID: 00001801-0000-1000-8000-00805f9b34fb

Device Information
UUID: 0000180a-0000-1000-8000-00805f9b34fb

Unknown Service
UUID: 0000ffc0-0000-1000-8000-00805f9b34fb

Unknown Service
UUID: 0000ff90-0000-1000-8000-00805f9b34fb

Unknown Service
UUID: 9045ff01-9b8b-5191-6142-22a4536ef123

Unknown Characteristic
UUID: 9045ff02-9b8b-5191-6142-22a4536ef123
Properties: WRITE, NOTIFY, WRITE_NO_RESPONSE

Unknown Service
UUID: 5833ff01-9b8b-5191-6142-22a4536ef123

Data format: aa00bb11cc22   Send

hex   Default No Response Signed

Circularly Delay(ms): 10

Scale-4502-a1...   Disconnect
62:00:A1:10:00:00

Gatt Services   Logs

Filter keywords(not case sensitive)

us-ascii   ✓ Display send   ✓ Auto-scroll

☐ Simplify

Rx: 1248 packages, 12480 bytes
Tx: 0 p, 0 b 0 p, 0 b

17:22:31.707> [9045ff02] Notify: "WGT:3 0.0P 0"
17:22:31.750> [9045ff02] Notify: ".0

17:22:31.802> [9045ff02] Notify: "WGT:3 0.0P 0"
17:22:31.802> [9045ff02] Notify: ".0

17:22:31.851> [9045ff02] Notify: "WGT:3 0.0P 0"
17:22:31.852> [9045ff02] Notify: ".0

17:22:32.003> [9045ff02] Notify: "WGT:3 0.0P 0"
17:22:32.004> [9045ff02] Notify: ".0

17:22:32.005> [9045ff02] Notify: "WGT:3 0.0P 0"
17:22:32.005> [9045ff02] Notify: ".0

17:22:32.051> [9045ff02] Notify: "WGT:3 0.0P 0"
17:22:32.052> [9045ff02] Notify: ".0

Data format: aa00bb11cc22   Send

hex   Default No Response Signed

Circularly Delay(ms): 10

5.7.3 CON2 Communication Protocol Testing
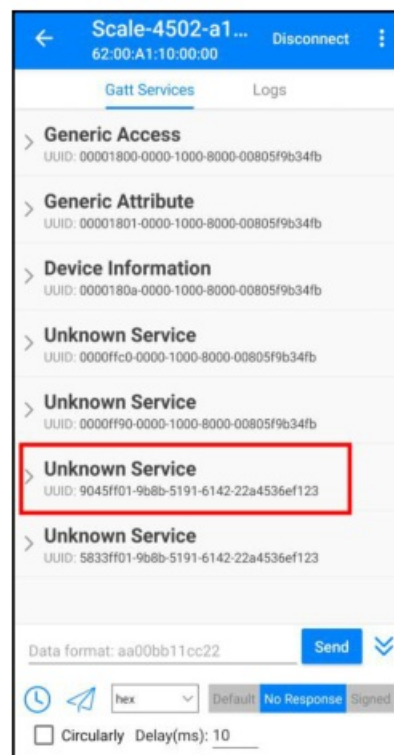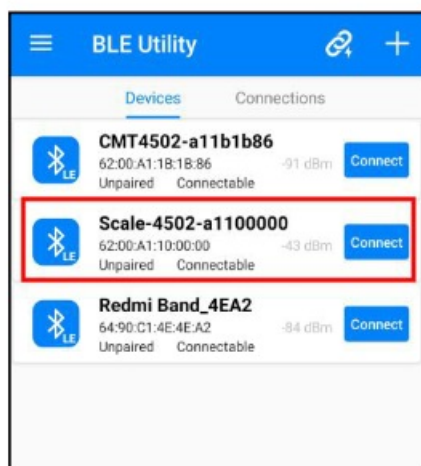
1. Turn on the scale.

2. Press [TARE] key during that start-up, and the display will be showing "FO bL".
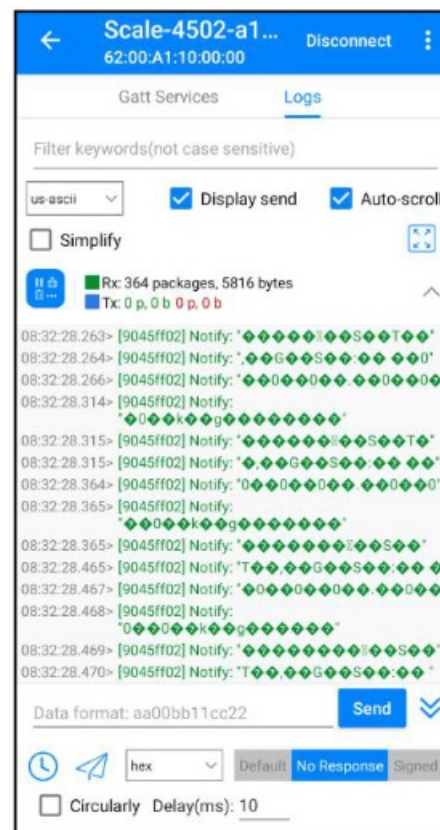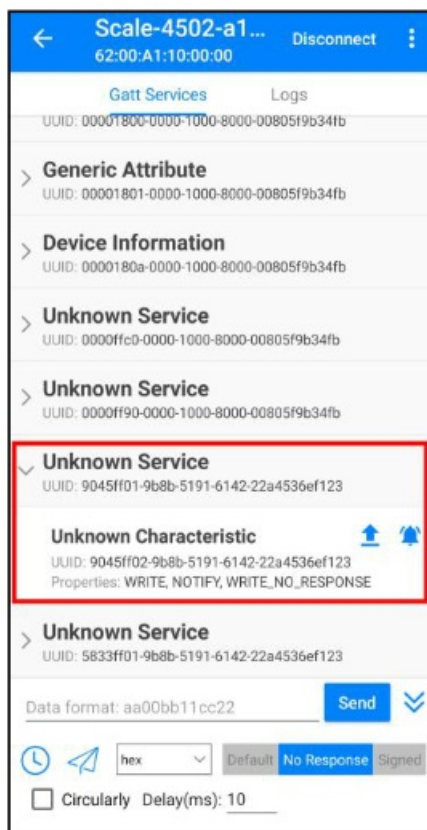
3. Press [TARE] key until the display shows "F2 Con".

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

5. Press [TARE] key to enter, and the display will show "**Con 1**"

6. Press [ZERO ON/OFF] key to select "**Con 2**"

7. Press [ZERO ON/OFF] key to confirm, the display shows "**StA**"

8. Press [ZERO ON/OFF] key to confirm

9. Press [TARE] key to select the "**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 shown.

5.7.4 ASK Command Testing

1. Turn on the scale.

2. Press **TARE** key during that start-up, and the display will be showing *"FO bL"*.

3. Press **TARE** key until the display shows *"F2 Con"*.

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

5. Press **TARE** key to enter, and the display will show *"Con 1"*

6. Press **ZERO ON/OFF** key to select *"Con 2"*

7. Press **ZERO ON/OFF** key to confirm, the display shows *"StA"*

8. Press **ZERO ON/OFF** key to confirm

9. Press **TARE** key to select the *"bACt"* option

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

Testing steps in the mobile phone
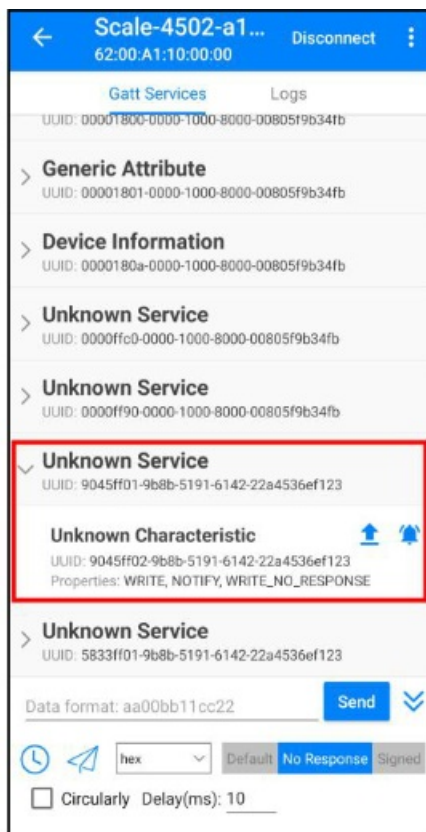
1. Tab the connect button in your phone to connect the Bluetooth module
2. Select the Unknown Service the last but one

3. Tab it and turn on the icon, Once set it successfully, The [▼] indicator above[✳] Bluetooth indicator in the scale appears.
4. Tab logs and Entered the Command to receive the corresponding data

   Command W: read data

   Command TARE: Tare

   Command ZERO: Zero
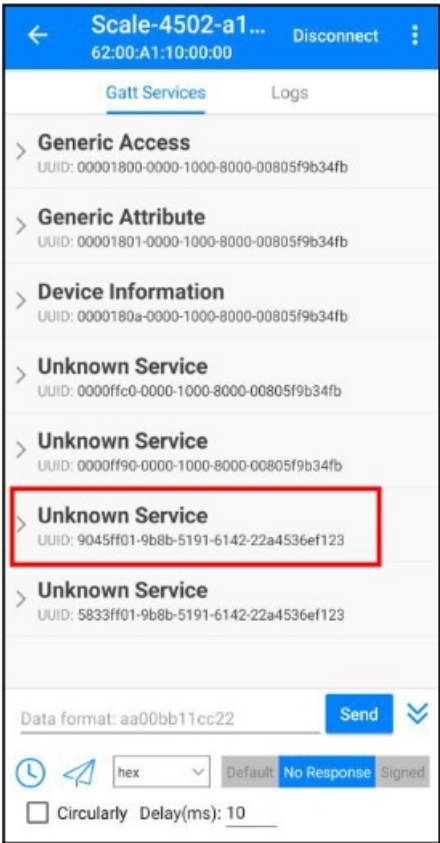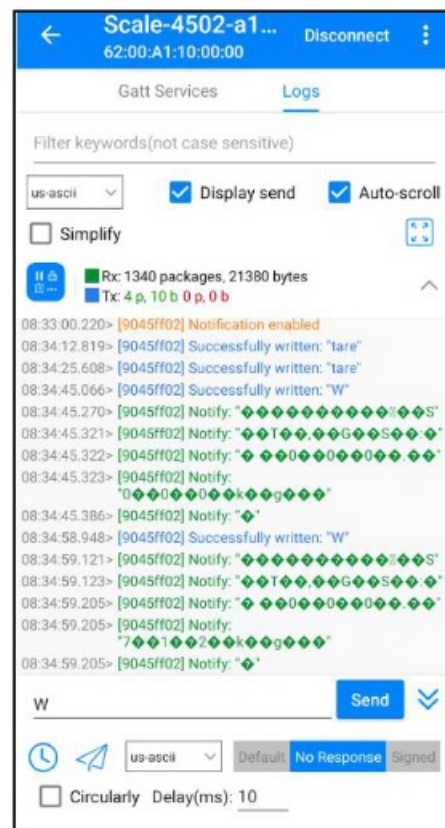
5.8 POS/ECR protocol selection

1. Turn on the scale.

2. Press [TARE] key during that start-up, and the display will be showing "FO bL".

3. Press [TARE] key until the display shows "CAS 2"

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

5. Press [TARE] key to select the "Port" option

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

7. Press [TARE] key until the display shows "F2 Com"

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, the display shows "F2 COM"

11. Press [TARE] key to select the "bACt" option

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

PARAMETER SETTING

Enter into the Menu

- Press **TARE** key during that start-up, the 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 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 located below the scale
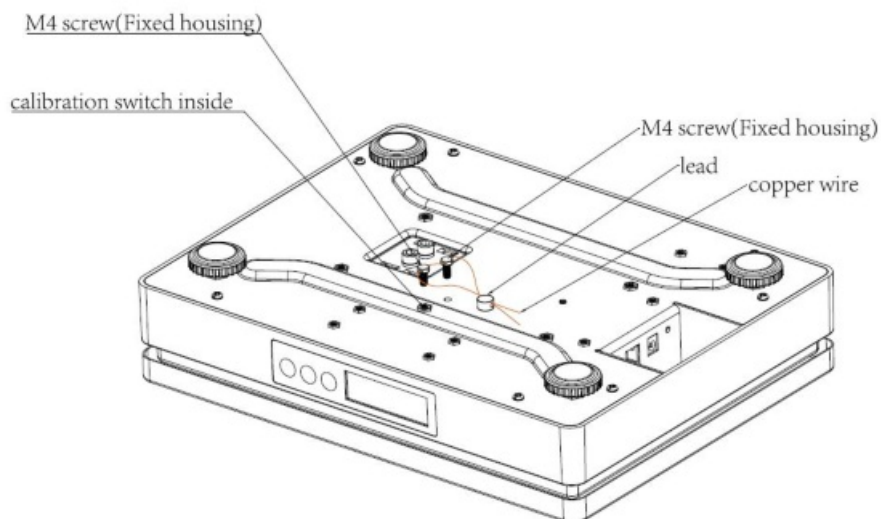
6.1 MENU BLOCK

Menu	Sub-Menu	Description
"*FO bL*".	oFF	To set the backlight function
	on	
	RUED	

F1 oFF	oFF			Auto off function disable
	3			Scale will be auto-off three minutes later
	ID			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	CoLIE	Continuous Protocol 2
			SLR	Send stable weighing data
		CRS	RCE	CAS Active Protocol
			PRS	CAS Passive Protocol
		ASt		Ask mode 1)Command W: read data 2)Command TARE: Tare 3)Command ZERO: Zero
		oFF		RS232 Communication port off
		CRS 2	E9PE 0	CAS POS /ECR protocol
			E9PE 2	
			EYPE 4	
			E9PE 5	
			E9PE 6	

F3 iSn	To show the internal counts		
F4 tArE	oFF	To disable the tare function	
	on	To enable the tare function	
tECH	For any approved version, it's required to press the calibration switch		
	APProu	CPR	CPA approval
		o inL	OIML approval

		ntEP	NTEP approval
		nonE	None approval
		SLSi	SLSI approval
	P1 CAL	CAL HG	Calibration
		CAL Lb	
	P2 rES	3000\3000r\ 3000 i/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 StA	on	Multi-Tare operation enable
		oFF	Multi-Tare operation disable
bACH	Escape from the setting menu and back to normal weighing mode		

Note: To calibrate in "kg" or "lb" unit, capacity will be shown in kg or lb values.
The default setting is marked by *

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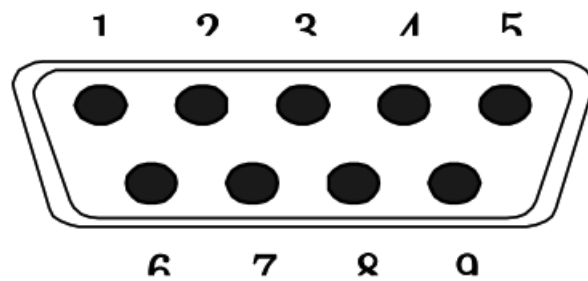
Pin 2	RXD	Input	Receiving data
Pin 3	TXD	Output	Transmission data
Pin 5	GND	—	Signal ground

9pin D Connector:

Scale	Computer
Pin 2	Pin 3
Pin 3	Pin 2
Pin 5	Pin 5

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	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		
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		

DIMENSIONS(inch/mm)
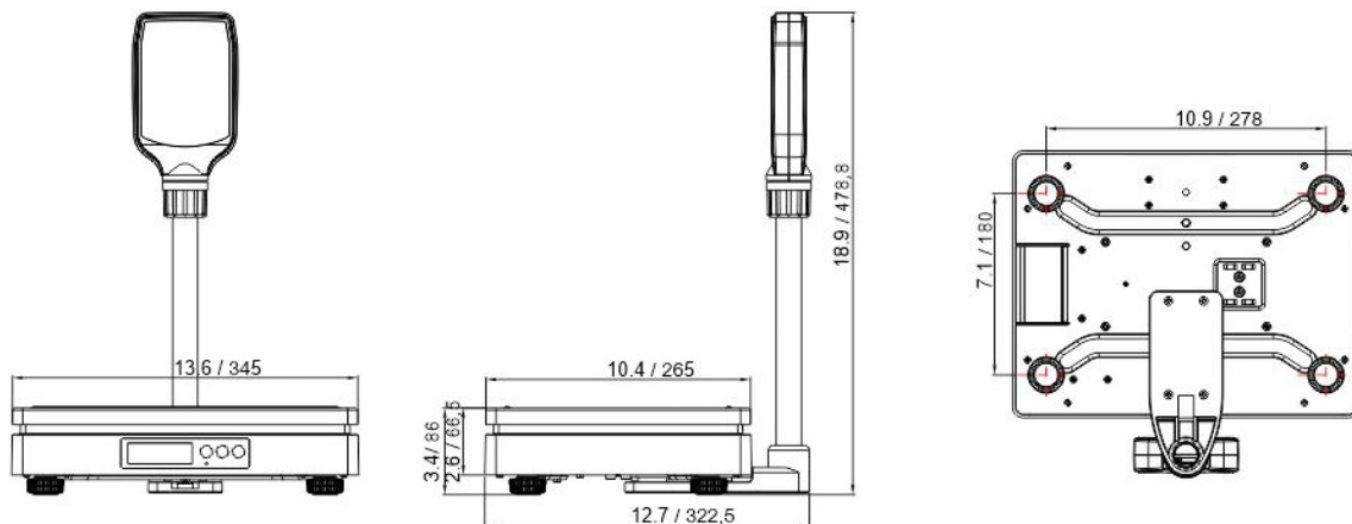
ERROR MESSAGE

Error Message	Description	Solution
$Err\ 4$	Zero setting error	Zero setting range exceeded due to switching on. (4%max) Make sure the platform is empty.
$Err\ 6$	AID value out of range	Make sure the platform is empty and check the pan is installed properly. Check the load cell connectors.
$--oL--$	Over range	Remove the load. Recalibrate
$FA\ iL$	Calibration Error	Check the calibration weight and recalibrate

VISIONTECH SHOP

Documents / Resources

VISIONTECH SHOP Operation Manual TPD Interface Scale	**VISION TECH SHOP TPD Series TPD-12 Interface Scale** [pdf] User Manual TPD Series, TPD-12, Interface Scale, TPD Series TPD-12 Interface Scale

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