Smart Weighing Scale for Intelligent Logistics and Manufacturing

IoT READY

Product Description

The IoTReady smart weighing scale is an integral component in any data-driven ERP system. It enables you to easily implement key logistics functions such as part and product weighing, weight checks and recording of data for long term analysis. With its local display and Bluetooth connectivity, it provides easy access to setup and configuration functions as well as real-time feedback on weight measurements. Its unique ability to be integrated into an ERP system means you can seamlessly link weighing information into your product and manufacturing workflows.

Key Features

- Bright, local LED display
- Heavy duty, steel frame
- Mains (240V) powered with automatically recharging the battery backup
- Simple Bluetooth interface allows you to easily explore all the capabilities of the scale
- Data from the scale can be integrated via Bluetooth or WiFi into your on-premise or

Function	Smart Weighing Solution
Use	Industrial, Business
Capacity	20 kg - 120 kg (desktop form factor)
Accuracy	0.05% F. S
Weighing Unit	Kilogram
Safe Overload Capacity	120% F. S
Display Type	LED Display

cloud-based ERP infrastructure. ● Out of the box integration with AWS IoT (optional).	Display	Front, Back
	Display Color	Green
	Display Size	6 digit - 7 segment display (20x78mm)
	Communication Interface	Bluetooth
	Platform Dimension	300 x 300 mm
	Base Construction	Powder Coated MS Steel Frame
	Material	MS Flat structure
	Power Supply	6V/5Ah Rechargeable Battery
	Power Source	230V AC
	Full battery charging time	8 hrs
	Power Backup	18 Hours Battery Backup
	Operating Temperature Range	10 to 40 Degree C
	Relative humidity	5% to 95% RH.Atmosphere must be non-condensing at all times

Usage Instructions

Unpacking and installing the scale

1. Remove the scale from its packaging and place it at the location where it is to be used. Make sure that the location is a flat and level surface so that the scale will measure correctly. Please ensure that there are no obstructions.
2. Connect the scale to a power socket using the supplied cable. Ensure that the scale's rechargeable battery is fully charged.
3. Download and install the IoTReady mobile App.

Reading weight data via WiFi

1. The scales support AWS IoT over MQTT
2. Alternatively you can use custom HTTP API endpoints that can be pre-configured in the firmware or via Bluetooth.

The device sends data in the format:

```
{
    "device_id": "00224da09789",
    "weight": 21.23,
    "timestamp": 1580793934
}
```

Reading weight data via Bluetooth in the mobile app

1. This weighing scale broadcasts the weight data via Bluetooth making it easy to access real-time data from the scale.
2. To read the weight data in mobile:
   a. Connect the weighing scale and open the IoTReady mobile app.
   b. Read the mass on the mobile app.

Using the scale with a third-party app

Please refer to the Developer Instructions at the end of this document.

Weighing

Step 1 - Begin with no load on the scale, with the display reading at zero. Note that when the scale is started, it resets to zero, incorporating the weights of all items on the weighing surface.

Step 2 - Place item(s) to be weighed on the scale. The display shows the weight in kgs. The weighing scale broadcasts the data via Bluetooth to a mobile app.

Step 3 - Remove the item(s) to be weighed, so that the scale resets to zero.

Tare Feature

While weighing item(s) that must be held in a container, Tare allows the container weight to be pre-stored in the memory, so that the scale can automatically subtract this weight from the measurement and the user gets the weight of the item(s) directly. To use the Tare feature:

1. Place the container on the weighing surface
2. Press the Tare button on the right side of the machine
3. The container weight is stored in the memory and the display should now show 'Zero'.
4. Use the scale normally

To reset the display scale to default settings, remove all the item(s) from the weighing surface and press the Tare button. Now the device will display the weight of the item(s) and the container.

Auto-Tare - This device also has an "auto-tare" feature which means that while the device is initializing, the weight on the scale is "tared off" and the scale displays 'Zero'. To avoid misreadings, avoid touching or keeping anything on the scale while it is initializing.

Calibration

WARNING: Wrong calibration can lead to wrong readings. Avoid using this until it is extremely required. We ship our machines with proper calibration, and are not responsible for wrong readings due to tampered calibration.

Should you ever find the need to calibrate the machine, please follow the following steps:

1. Make sure the machine is turned on and in normal weighing mode.
2. Place a known weight on the platform. A weight of 30% of the machine's capacity is recommended for more accurate calibration.
3. While holding the M+ key, press the MODE key. The display should then show "PASSUd".
4. Press the TARE button. The display should then show "00000".
5. Use the M+ and MR keys to enter the known weight's value. Note that the unit of calibration factor is 10gms.
6. Press the TARE button to finish calibration.

Counting Mode:

The machine is capable of counting the number of pieces when in counting mode. To setup and enter counting mode, follow the following steps:

1. Make sure the machine is turned on and in normal weighing mode.
2. Place a known number of pieces on the platform. The display should show you the weight.
3. While holding the M+ key, press the MR key. The display should then show "Count".
4. Press the TARE button. The display should then show "P00000".
5. Use the M+ and MR keys to enter the number of pieces kept on the platform.
6. Press the TARE button to finish setup and enter counting mode.
7. To go back to weight mode, press the MODE key.

Precautions
- Place the scale on a stable and flat surface.
- Do not disassemble the scale.

- **Do not overload** beyond the maximum weight limit.
- Avoid placing the scale near the heater or in direct sunlight.
- Prevent the scale from getting wet.
- **Use the provided charging cable**, an incorrect cable could damage the scale.
- Avoid sudden shock to the scale.
- Use the handle to move the scale.
- When recharging, please don't share power with other equipment, and avoid electromagnetic interference from other devices.
- Switch off the scale while plugging and unplugging the charger.

Developer Instructions

1. Scan the barcode printed below the display on the front face of the machine.
2. If your app does not have a barcode scanner integrated, search for, and connect to, available devices with advertising name in the format:

   "IoTReadyScale xxxxxxxxxxxx"

   where xxxxxxxxxxxx is the 12-digit MAC ID of the device, also printed on the machine just below the barcode.
3. On successful connection with the device, you will see two GATT Services available. The tables below refer to the characteristics that each of these services hold, and what values you will be able to read/write to it.

Service and characteristic UUIDs to configure the device:

Service / Characteristics Name	UUID Handle	Read / Write / Notify	Value to read / write
System Settings Service	0x00EE	Service	-

WiFi SSID Characteristic	0xEE01	Read/Write	Write WiFi SSID to connect to
WIFI Password Characteristic	0xEE02	Read/Write	Write WiFi Password
Connect to WiFi Characteristic	0xEE08	Write	Write '1' to connect to WiFi

Service and characteristic UUIDs to get the weight data:

Service / Characteristics Name	UUID Handle	Read / Write / Notify	Value to read / write
Device State Service	0x00FF	Service	-
Weight Data Characteristic	0xFF00	Read/Notify	Read the real-time weight

Note: Before connecting to the WiFi, please make sure that the correct WiFi SSID and Password have been written on their respective Characteristics

Reach Us

IoTReady

5/1, Penthouse 01, 6th Floor, Rich Homes,
Richmond Road, Bengaluru,
Karnataka - 560025

+91 91139 71957
hello@iotready.co