Load Cell 20kg – Straight Bar Weight Sensor for Accurate Measurement

The **Load Cell 20kg – Straight Bar Weight Sensor** is a **high-precision sensor** designed for **measuring weight and force in industrial, commercial, and DIY electronics projects**. With a **20kg capacity**, this straight bar load cell provides **accurate, reliable, and stable readings**, making it perfect for **Arduino, Raspberry Pi, and other microcontroller-based applications**.

Ideal for **engineers, hobbyists, and students**, this load cell is commonly used in **digital scales, industrial weight monitoring systems, robotics force sensing, and scientific experiments**. Its **robust construction, high sensitivity, and compact design** ensure **consistent performance** in various environments.

Key Features

- **Weight Capacity:** 20kg for medium to heavy weight measurement projects.
- **High Precision:** Provides accurate and stable output for reliable readings.

- **Straight Bar Design:** Compact and easy to mount for various setups.
- **Durable Material:** Alloy steel construction ensures long-term stability and durability.
- **Easy Integration:** Compatible with Arduino, Raspberry Pi, and other microcontroller platforms.
- **Compact & Lightweight:** Space-saving design suitable for embedded or small-scale devices.
- **Low Hysteresis & High Linearity:** Minimizes measurement errors for precise readings.

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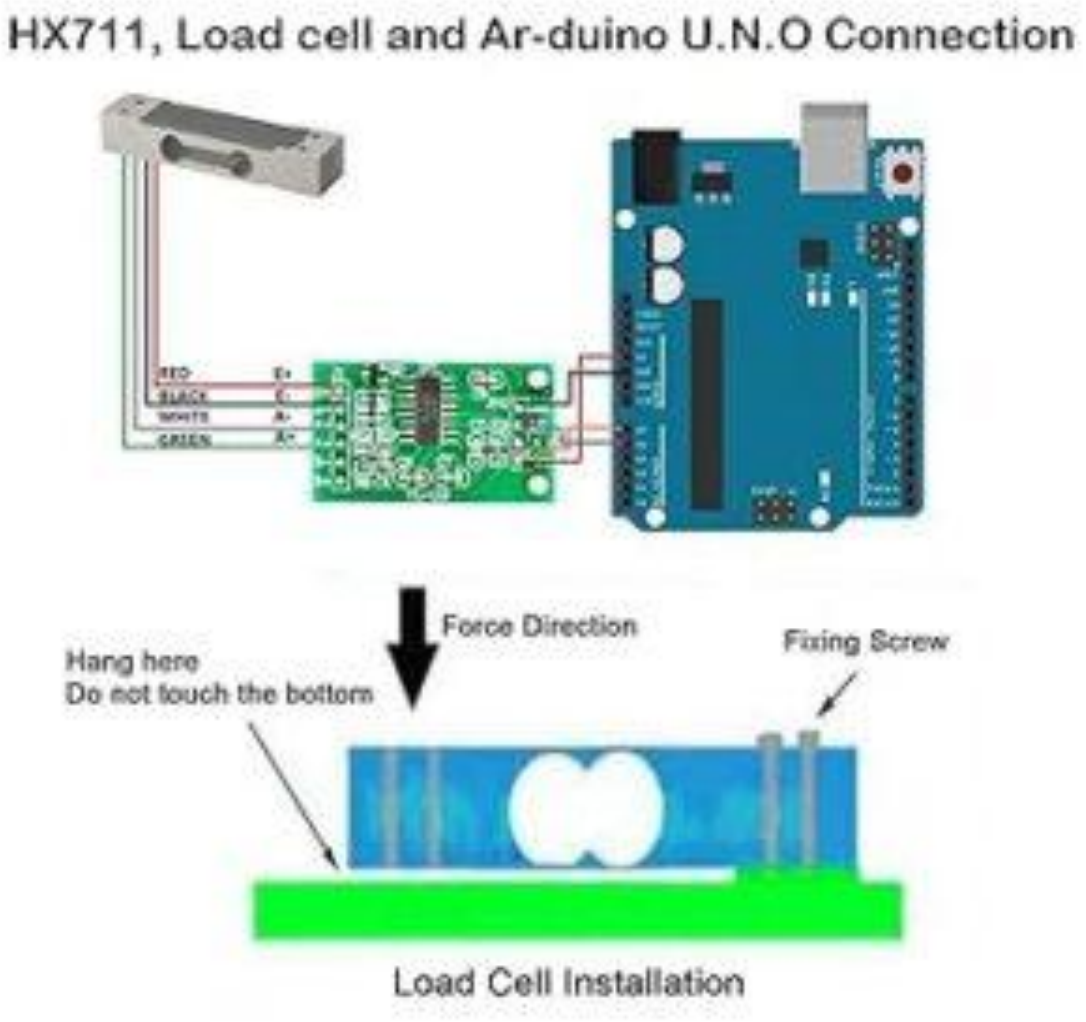
Load Cell 20kg – Straight Bar Weight Sensor[/caption]

Technical Specifications

- **Model:** Load Cell 20kg – Straight Bar
- **Capacity:** 20 kilograms
- **Material:** Alloy steel
- **Output Type:** mV/V analog signal
- **Excitation Voltage:** 5–10V DC (typical 5V)

- **Non-Linearity:** ±0.03% F.S.
- **Hysteresis:** ±0.03% F.S.
- **Operating Temperature:** -10°C to 40°C
- **Connection Wires:** Red (+Exc), Black (-Exc), Green (+Signal), White (-Signal)
- **Dimensions:** Compact straight bar suitable for medium to heavy-weight applications



Advantages of the 20kg Straight Bar Load Cell

1. **High Accuracy:** Provides precise weight measurement for loads up to 20kg.
2. **Durable & Reliable:** Alloy steel construction ensures long-lasting performance.
3. **Compact Design:** Easy to mount in digital scales, weighing machines, and embedded systems.
4. **Low Power Operation:** Efficient performance with microcontroller-based systems.

5. **Versatile Applications:** Suitable for industrial monitoring, robotics, DIY electronics, and educational projects.

Applications

The **Load Cell 20kg – Straight Bar Weight Sensor** is widely used in:

- **Digital Weighing Scales:** Perfect for kitchen scales, industrial scales, lab scales, or other devices requiring up to 20kg measurement.
- **Robotics & Automation:** Detect forces and weights in robotic arms, conveyor belts, and automated systems.
- **Industrial Monitoring:** Monitor load in machinery, packaging systems, and production lines.
- **DIY Electronics Projects:** Integrate with Arduino, Raspberry Pi, or other microcontrollers for smart weighing systems.
- **Educational Kits:** Ideal for teaching students about sensors, electronics, and load measurement.
- **Scientific Experiments:** Provides accurate weight readings for laboratory and research applications.

How It Works

The straight bar load cell uses a **strain gauge principle**. When a weight or force is applied, the strain gauge **slightly deforms**, producing a **millivolt-level analog signal proportional to the applied load**. This signal can be amplified and processed using a microcontroller with an **HX711 amplifier module**.

The sensor is calibrated to ensure **linear response with minimal hysteresis**, providing **stable and precise readings** for weights up to 20kg. Its **robust alloy steel construction** ensures reliable performance even under continuous or repeated loading.

Example Project

A typical application is a **smart digital scale**. The load cell measures weight, and an Arduino or Raspberry Pi reads the signal via an HX711 amplifier, displaying the **accurate weight on an LCD or touchscreen interface**.

Another application is a **robotic gripper** where the load cell detects gripping force for medium-weight objects, ensuring **safe handling**. It is also suitable for **industrial conveyor monitoring, automated packaging, or laboratory force measurement** projects.

Why Choose the 20kg Straight Bar Load Cell

The **Load Cell 20kg – Straight Bar Weight Sensor** is **precise, durable, and easy to integrate**. Its **high accuracy, compact design, and wide compatibility** make it ideal for a variety of applications—from **digital weighing scales to robotics and industrial monitoring**.

Whether for **DIY electronics, laboratory experiments, or commercial applications**, this load cell ensures **reliable and consistent weight measurement** for medium to heavy loads.

Conclusion

The **Load Cell 20kg – Straight Bar Weight Sensor** is a **versatile and high-performance sensor** for Arduino, Raspberry Pi, and professional applications. With **accurate readings, durable alloy steel construction, and compact design**, it is perfect for **digital scales, robotics force sensing, industrial monitoring, and educational projects**.

Upgrade your project with this **20kg straight bar load cell** for **accurate, reliable, and easy-to-integrate weight measurement**.