Wishiot FZ1878X2

Wishiot Digital Load Cell Weight Sensor (FZ1878X2) Instruction Manual

1. Introduction

This manual provides comprehensive instructions for the Wishiot Digital Load Cell Weight Sensor (Model FZ1878X2). This high-precision miniature load cell is designed for accurate weight measurement in various DIY electronic projects, including portable kitchen scales, pet feeders, and other intelligent weighing equipment. Please read this manual carefully before installation and operation to ensure proper use and longevity of the product.

2. Product Overview

The Wishiot Digital Load Cell is a robust and reliable sensor constructed from high-quality aluminum alloy, featuring a parallel beam structure. It utilizes four leads for easy integration and operates with a 5-10V drive voltage, outputting force as a direct voltage change signal. This product is available in various capacities: 1kg, 5kg, 10kg, and 20kg.



Figure 1: Wishiot Digital Load Cell Weight Sensor. This image displays the Wishiot digital load cell weight sensor, highlighting its compact design and integrated wiring. The sensor is marked for a 10kg capacity.

3. Specifications

The following table details the technical specifications of the Wishiot Digital Load Cell Weight Sensor (Model YZC-133):

Parameter	Value
Model	YZC-133
Capacity Options	1kg, 5kg, 10kg, 20kg
Rated Output	1.0±0.15mV/V
Non-linearity	0.0005
Repeatability	0.0003

Parameter	Value
Hysteresis	0.0003
Creep (5 Min)	0.001
Temperature Effect On Sensitivity	0.003%RO/°C
Temperature Effect On Zero	0.02%RO/°C
Zero Balance	±0.1%RO
Input Resistance	1066±20Ω
Output Resistance	1000±20Ω
Insulation Resistance	2000MΩ (50V)
Recommended Excitation Voltage	5V
Compensated Temperature Range	-10~+50°C
Operating Temperature Range	-20~+65°C
Safe Overload	120%RO
Ultimate Overload	150%RO
Load Cell Material	Aluminium Alloy
Connecting Cable	Φ0.8X180mm
Dimensions (L x W x H)	80mm x 12.7mm x 12.7mm (3.15in x 0.5in x 0.5in)
Item Weight	1.76 ounces

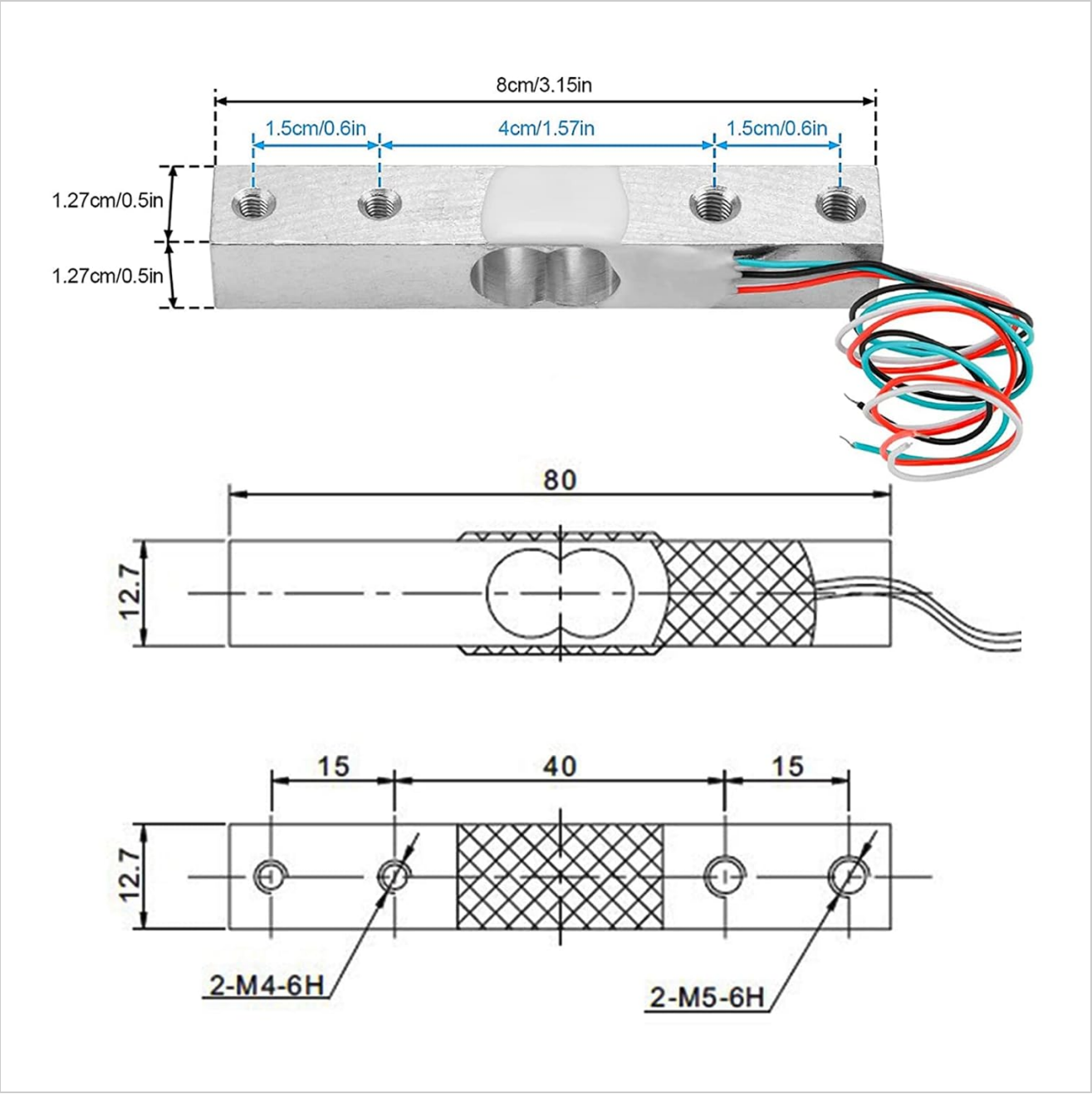


Figure 2: Load Cell Dimensions. A technical drawing showing the precise dimensions of the load cell in both millimeters and inches. Key measurements include overall length (80mm / 3.15in), width (12.7mm / 0.5in), and screw hole spacing.

4. Setup and Installation

4.1 Mounting Instructions

To ensure accurate readings, the load cell must be mounted correctly. Fix one end of the sensor using the screw holes provided, while the other end should remain in a floating state. Apply gravity or force in the direction indicated by the label on the sensor. It is crucial not to directly press on the white plastic cover part, as this can damage the sensor's internal components.

4.2 Wiring Connection

The load cell features four color-coded leads for connection. These typically connect to an analog-to-digital converter (ADC) module, such as the HX711, which then interfaces with a microcontroller like Arduino. Follow the connection scheme below:

- **Red Wire:** E+ (Excitation Voltage Positive)

- **Black Wire:** E- (Excitation Voltage Negative)
- **Green Wire:** A+ (Analog Output Positive)
- **White Wire:** A- (Analog Output Negative)

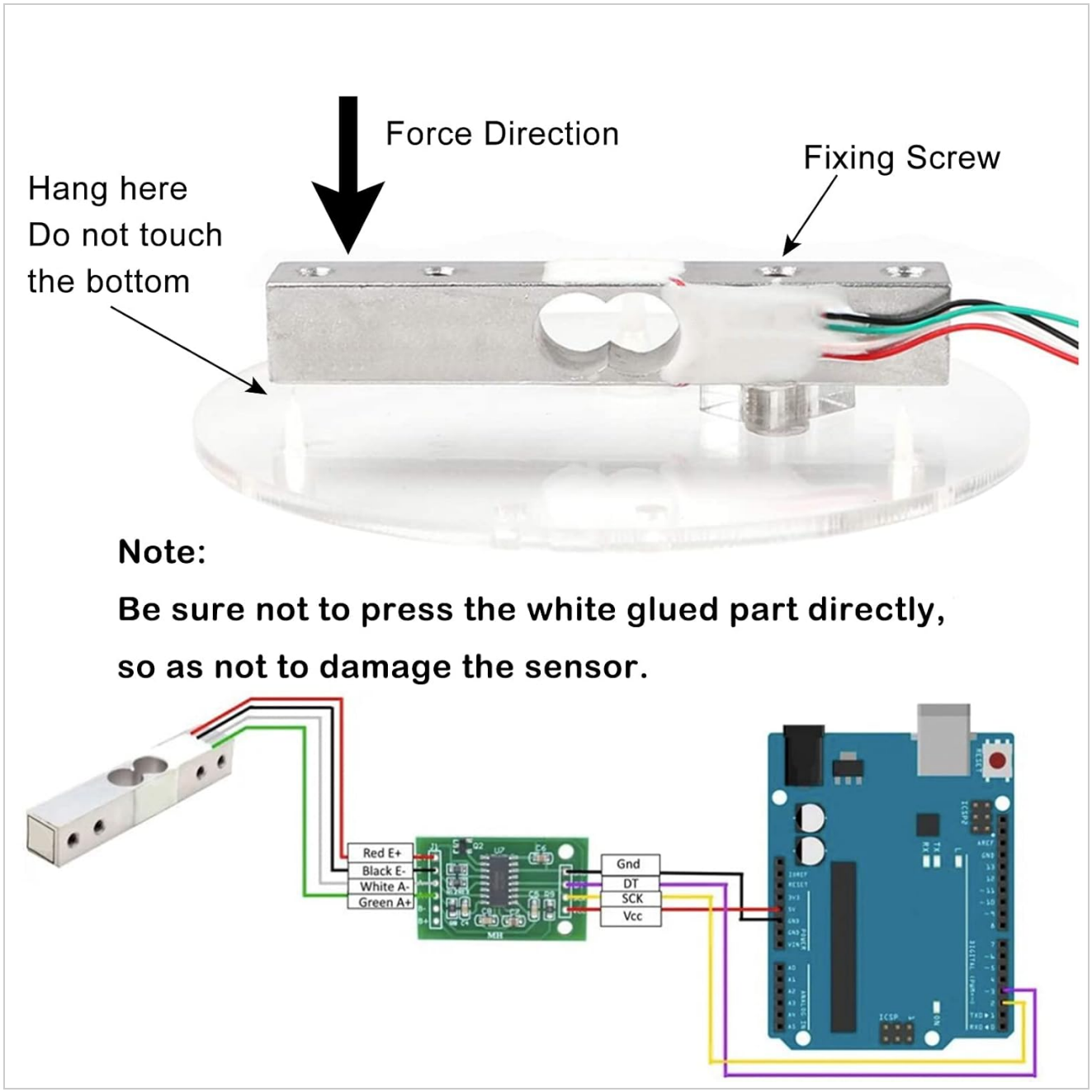


Figure 3: Installation and Wiring Diagram. This diagram illustrates the correct mounting of the load cell, indicating the direction of applied force and the fixing screw. It also provides a wiring schematic connecting the load cell to an HX711 amplifier module and an Arduino board, detailing the color-coded wire connections (Red E+, Black E-, Green A+, White A-).

5. Operation

Once properly installed and wired to an appropriate ADC module and microcontroller, the load cell will output a voltage signal proportional to the applied force. This analog signal is then converted to a digital value by the ADC, which can be read and processed by the microcontroller. Calibration is essential for accurate weight measurements. Refer to the documentation of your chosen ADC module (e.g., HX711) and microcontroller platform (e.g., Arduino) for specific programming and calibration procedures.

6. Maintenance

The Wishiot Digital Load Cell is designed for durability. To ensure optimal performance and longevity:

- Keep the sensor dry and free from excessive moisture or corrosive environments.
- Avoid applying force beyond the specified Safe Overload (120%RO) and Ultimate Overload (150%RO) limits.
- Do not press directly on the white glued part of the sensor, as this can cause damage.
- Ensure proper clearance around the sensor during mounting to prevent unintended contact that could affect readings.

7. Troubleshooting

If you encounter issues with your load cell, consider the following troubleshooting steps:

- **No Reading or Erratic Readings:**
  - Verify all wiring connections are secure and correct according to the diagram in Section 4.2.
  - Check the power supply to the load cell and the ADC module; ensure it is within the recommended 5-10V range.
  - Ensure the load cell is mounted correctly, with one end fixed and the other floating, and that no part of the sensor or its mounting is touching other surfaces that could interfere with force application.
  - Re-calibrate your weighing system.
- **Inaccurate Readings:**
  - Perform a thorough calibration of your system.
  - Check for any physical obstructions or unintended contact points around the load cell.
  - Ensure the applied load does not exceed the sensor's rated capacity.

8. Warranty and Support

For any questions, technical assistance, or support regarding your Wishiot Digital Load Cell Weight Sensor, please contact Wishiot customer service. While specific warranty details are not provided in this manual, general product support is available to assist with product inquiries and operational guidance.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

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Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question