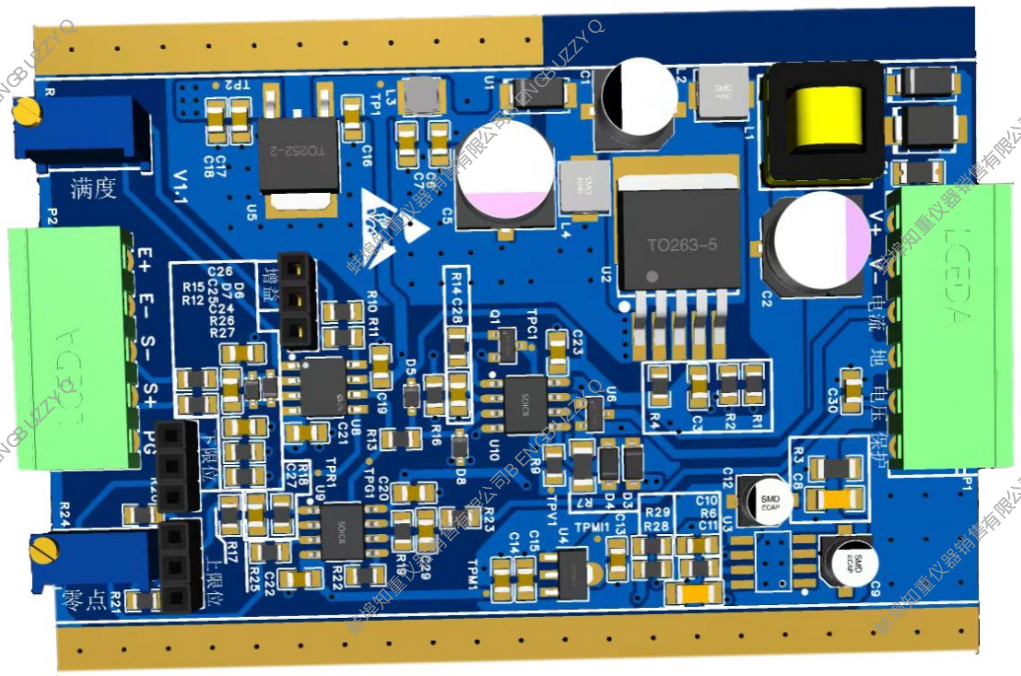
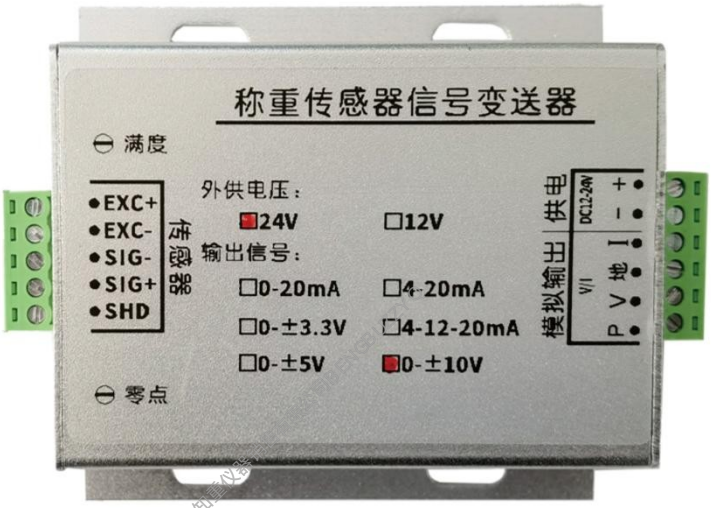
High-Precision Analog Transmitter

User Manual

Version V2.1



Main Features



Aluminum alloy housing, strong and durable, with excellent anti-interference performance

High-precision operational amplifier circuit with multiple filtering, high accuracy, and good stability

Voltage and current can be output simultaneously, with a wide zero adjustment range

Built-in high-end buck-boost chip, stable output, negligible effect from power supply fluctuations

Suitable for various strain-type sensors such as weighing, tension/compression, torque, etc.

Technical Parameters

Operating Voltage: DC 12–24V

Excitation Voltage: DC 5V

Input Load: 1–8 bridge sensors with 350Ω impedance

Supported Sensitivity Range: 0.8–3.0 mV/V

Output Signal: 0–±10V, 0–±5V, 0–±3.3V, 0–20mA, 4–20mA, 4–12–20mA

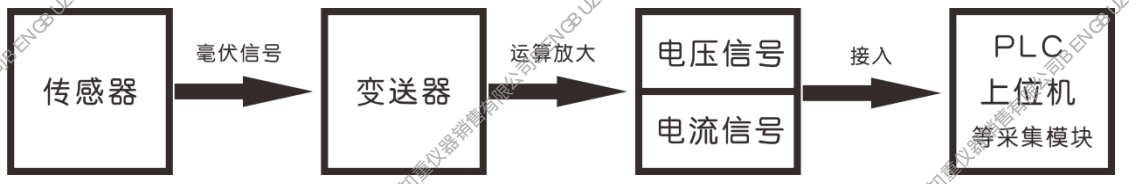
Operating Temperature Range: −20~80℃

Operating Humidity Range: 10%RH–90%RH (non-condensing)

Accuracy: Better than 0.03% F.S.

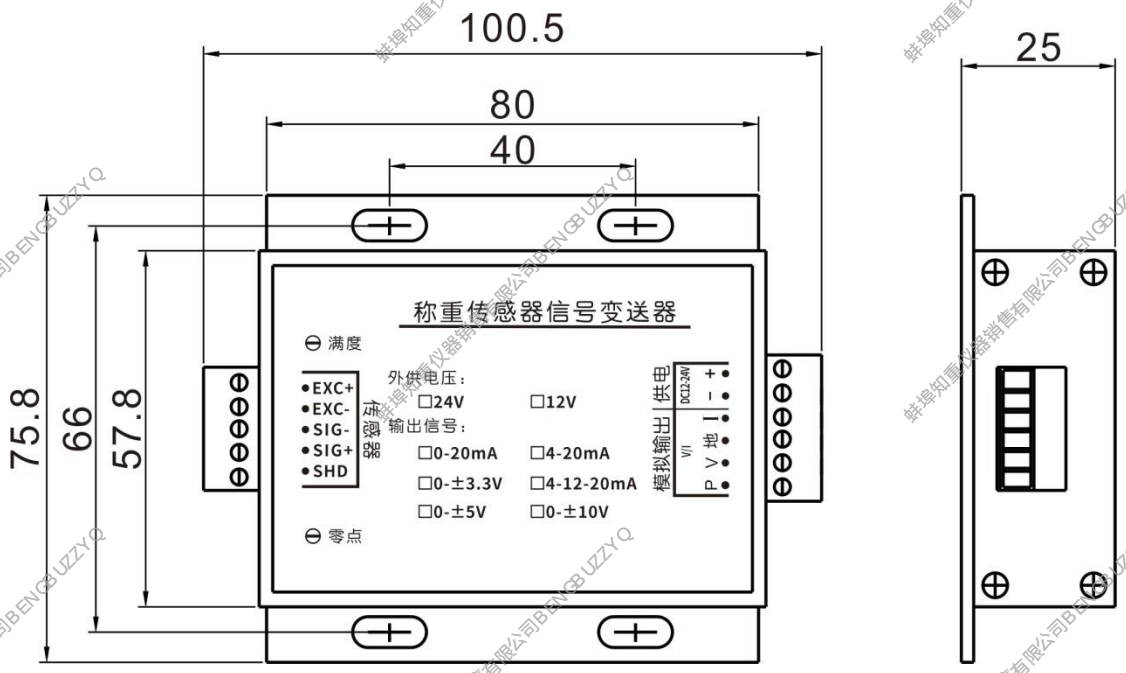
Working Principle

(Diagram omitted, original shows wiring and PLC connection schematic.)



Dimensions

(Refer to original diagrams: housing 100.9 × 80 × 40 mm, mounting size 66 × 57.8 mm, etc.)



Wiring Definition

Connection	Description
Sensor	
EXC+	Excitation positive
EXC−	Excitation negative
SIG−	Signal negative
SIG+	Signal positive
SHD	Shield line
Power	
+	Power positive
−	Power negative
Analog Output	
I	Current output
GND	Common ground
V	Voltage output
P	Case ground

> Note: The above wiring definition is for the **four-wire method**. For three-wire configuration, short the power negative and common ground. If the polarity of the output signal is opposite to the sensor loading direction, swap the signal positive (SIG+) and signal negative (SIG−).

The transmitter can simultaneously output analog voltage and current. However, since they share the same zero and span potentiometers, only **one output signal type** can be accurately adjusted. Users should select **one output mode** for calibration and leave the other output floating.

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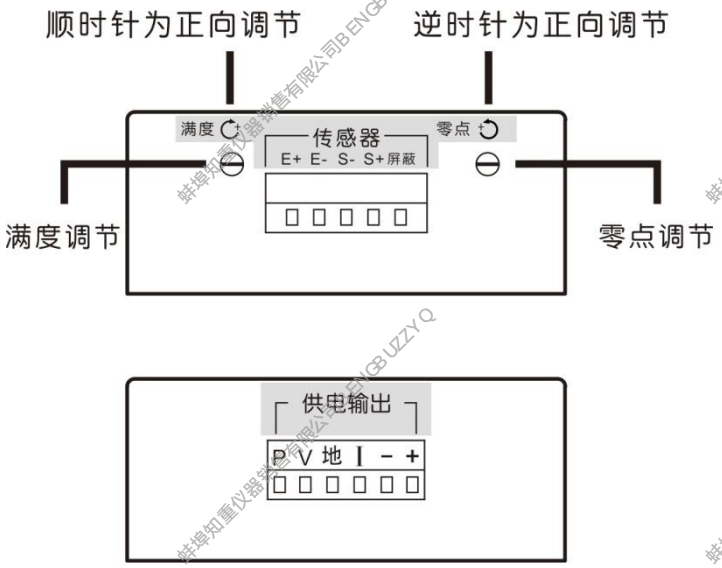
Calibration & Adjustment

1. Voltage Output Calibration



Power on the transmitter, connect the load cell and analog output cable.

Leave the load cell unloaded, and adjust the **Zero potentiometer (ZERO)** until the voltage output is 0V.

Apply the rated load, and adjust the **Span potentiometer (SPAN)** until the voltage output matches the set range (e.g., 10V).

Repeat steps 2 and 3 until the output is accurate.

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2. Current Output Calibration

Power on the transmitter, connect the load cell and current output cable.

Leave the load cell unloaded, and adjust the **Zero potentiometer (ZERO)** until the current output is 4mA.

Apply the rated load, and adjust the **Span potentiometer (SPAN)** until the current output is 20mA.

Repeat steps 2 and 3 until the output is accurate.

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3. Special Calibration (4–12–20mA Output Mode)

Power on the transmitter, connect the load cell and output cable.

Leave the load cell unloaded, and adjust the **Zero potentiometer (ZERO)** until the current output is 4mA.

Apply **half of the rated load**, and adjust the **Middle potentiometer (MID)** until the output is 12mA.

Apply the full rated load, and adjust the **Span potentiometer (SPAN)** until the output is 20mA.

Repeat steps 2–4 until the output is accurate.

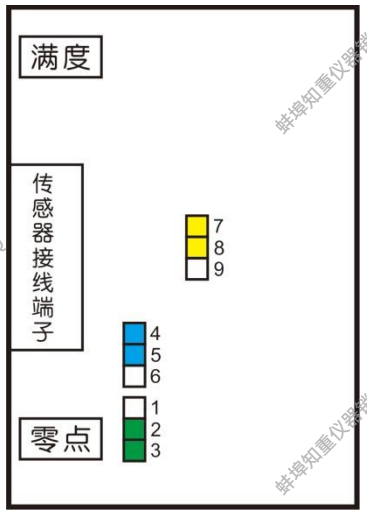

Figure 1. Factory location of the jumper cap.

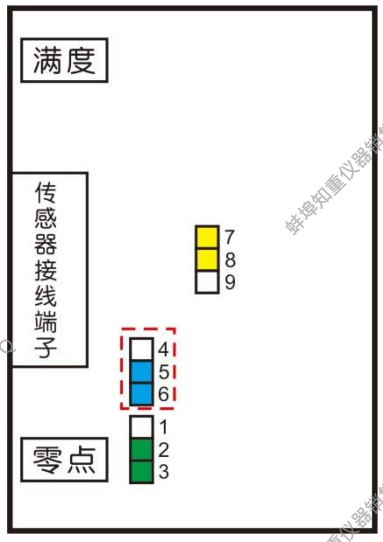

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Figure 2 shows that the 4-12-20mA output or the zero-point negative deviation is too large and exceeds the adjustment range.

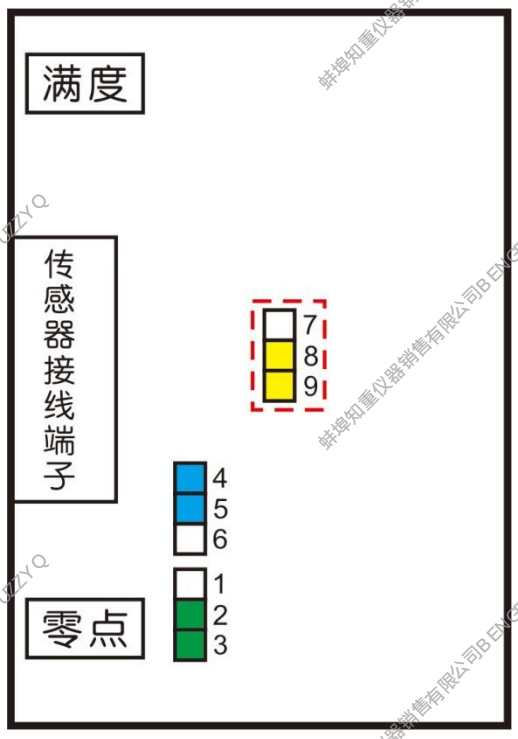

Figure 3: Sensitivity greater than 1.7mV/V, 0-±3.3V output

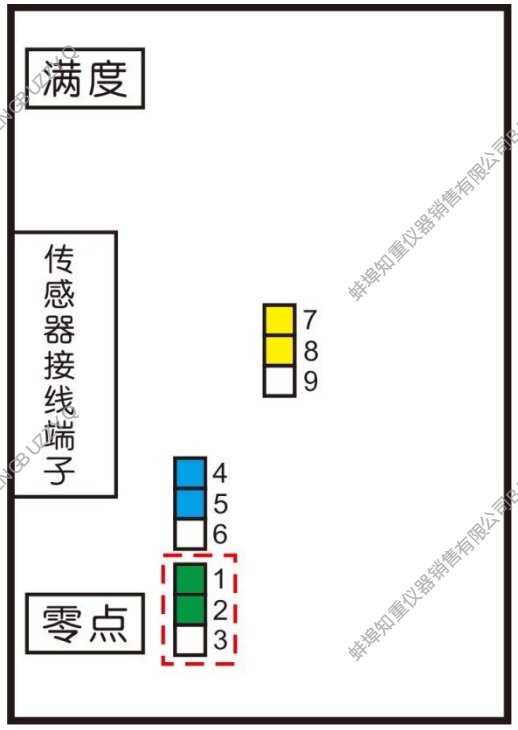

Figure 4 shows that the zero point is too positive and exceeds the adjustment range.

Sensitivity Jumper Settings

The transmitter supports sensors with sensitivity **0.8–3.0 mV/V**.
Internal jumpers can be used to set the approximate sensitivity range.

跳帽位置 Jumper position Sensitivity range Out range	0-±5V	0-±10V	0-±3.3V	4-20mA	4-12-20mA
7/8 short-circuit	0.4-2.5mV/V	0-7-4.0mV/V	0.3-1.7mV/V	0.4-3.0mV/V	0.2-1.3mV/V
8/9 short-circuit	2.5-4.0mV/V		1.6-3.0mV/V		1.3-2.3mV/V

Sensitivity Range	Jumper Setting
0.8 – 1.5 mV/V	Jumper in position A
1.5 – 2.5 mV/V	Jumper in position B
2.5 – 3.0 mV/V	Jumper in position C

Note: If calibration cannot be achieved within adjustment range, please check and set the sensitivity jumper correctly.

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