YW02-S
Truncated Capacitive Fuel Sensor
Installation and Usage Guide

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◆ PRODUCT INTRODUCTION

YW02-S capacitive level sensor is based on the change of capacitance caused by the rising or falling of fuel oil to continuously detect the level height of oil level. The product can be cut off at will according to the height of the tank, and can be adapted to GPS tracking system to monitor the fuel consumption of the tank in real time. The product has the characteristics of strong stability and long service life.

◆ FEATURES

- The measurement accuracy is high, with a precision of 1%.
- The sensor length can be truncated arbitrarily
- The external calibrator allows easy adjustment of parameters.
- SAE standard 5-hole screw fastening for quick and easy installation
- The measurement is continuous and stable, and the product has a long service life.
- It can be adapted to GPS tracking system to monitor and record fuel consumption in real time.
- It can directly replace the original fuel level sensor and connect to the original fuel gauge.

◆ APPLICATION

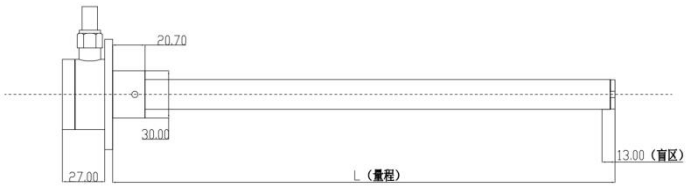
- Yacht Generator Fuel Oil Level Measurement
- diesel, biodiesel, gasoline, kerosene level detection (not for conductive media)
- Application of Fuel Tank Level Detection to Truck and Bus

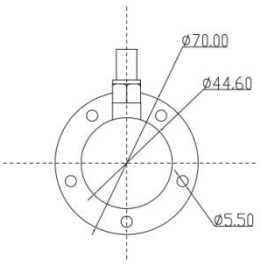
◆ SPECIFICATIONS

Project	Parameter
Range	10cm-150cm
Measuring medium	Gasoline, kerosene, diesel, etc. (not for conductive media)
Outgoing message	Voltage signal: 0 ~5v,0.5~4.5v Digital signals: Rs232, rs485 (customizable as required)
Power supply voltage	Dc9 ~36v/ 5v (wide voltage input)
Accuracy	±1%
Working temperature	-40 ~ +80℃
Output signal refresh rate	1s-1800s is configurable
Wire	Pvc material (with optional pa corrugated pipe sheath)
Levels of protection	Ip67
Probe material	Alufer
Way to install	Top-loading

◆ PRODUCT SIZE

Unit：mm





Serial port wiring (sensor wire sequence defined a

RS232: This method outputs data from sensors wit

Red Power

Black GND-(RS232 ground)

Green RS232 (RXD) Computer Transmitter

Yellow RS232 (TXD) computer receiving terminal

RS485: This method outputs data from sensors with 4-wire connections

Red Power

Black GND-(RS485 ground)

Yellow RS485 A

Green RS485 B

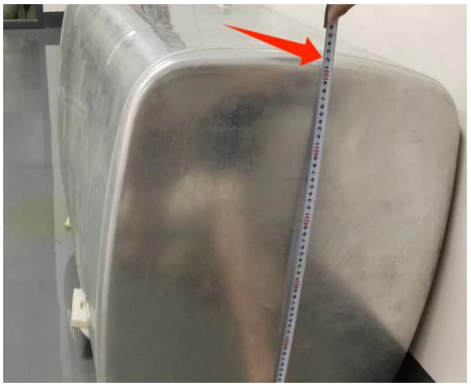
Product installation steps

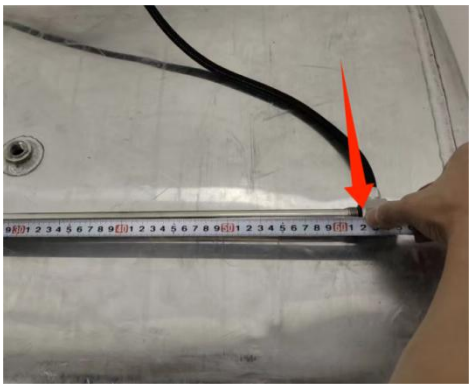
◆ 1. Prepare tools

Tools	
70cm oil rod	1
Asbestos paper gasket	1
Band tape	1
Arm saw	1
Marker pen	1
Phillips screwdriver	1
Automotive electronic sealant	1
Long flat nose pliers	1
Hand tool	1
Gimlet	1
Hex self-tapping screw	5
Oil extraction tool	1
Calibration handle	1

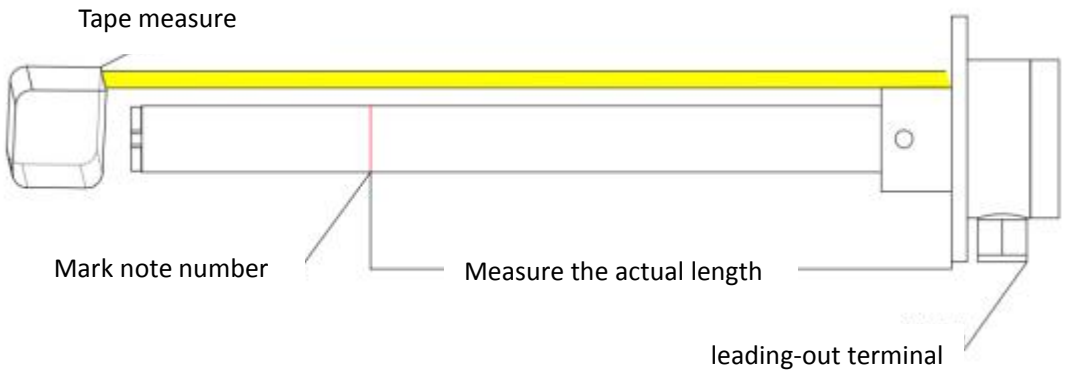
◆ 2. Determine the fuel tank dimensions and the length of the fuel level sensor.

2.1. Step 1: First, determine the fuel tank dimensions and the fuel sensor length, ensuring the sensor length is 1cm shorter than the tank's height (this 1cm difference prevents installation errors caused by inaccurate measurements). See the measurement method in the figure below.





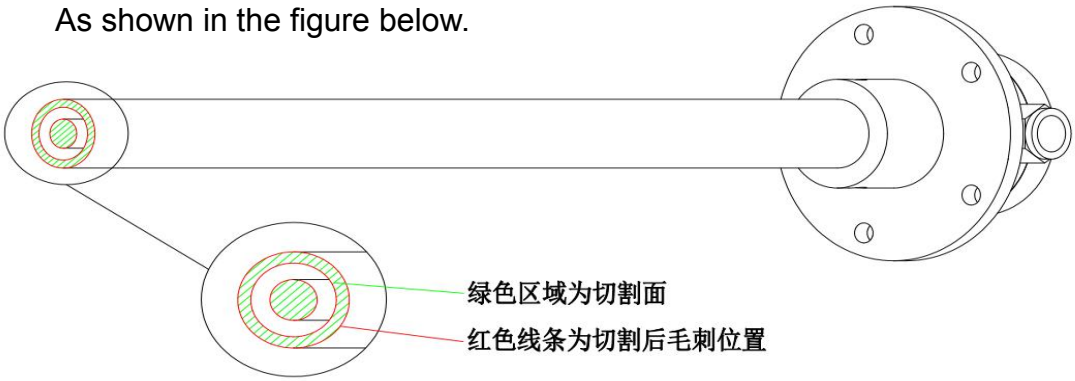
2.2 Step 2: Calculate the required length of the oil rod based on measurements, then mark the oil rod sensor with a tape measure and marker pen. Use a steel saw to cut the marked section.



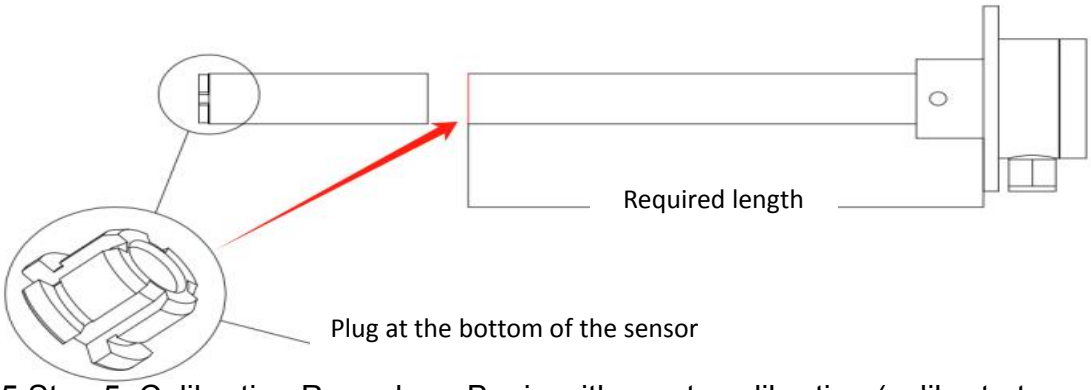
Note: The sensor must be at least 25 cm long after trimming.

2.3 Step 3: After the sensor is cut to the required length, the burrs generated during the cutting process must be removed with a blade.

As shown in the figure below.



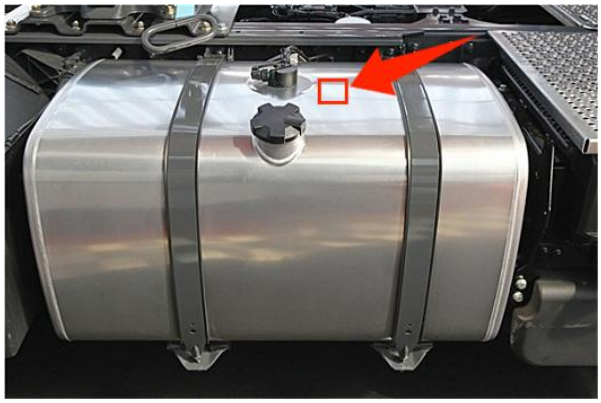
2.4 Step 4: After trimming, remove the original sensor bottom plug, reinstall it at the sensor base, and tighten to ensure a secure bottom seal.



2.5 Step 5: Calibration Procedure. Begin with empty calibration (calibrate to zero) and then full calibration. For empty calibration: Place the sensor in the air and press the A key until the red light stays on. After the light turns off, wait 5-6 seconds for the process to complete. For full calibration: Use a fuel pump to transfer oil from the tank into the delivery pipe (ensure the oil covers the sensor's vent hole). Press the B key to start calibration until the red light illuminates. Wait 5-6 seconds after the light turns off to confirm completion.

◆ 3. Start installing the oil rod

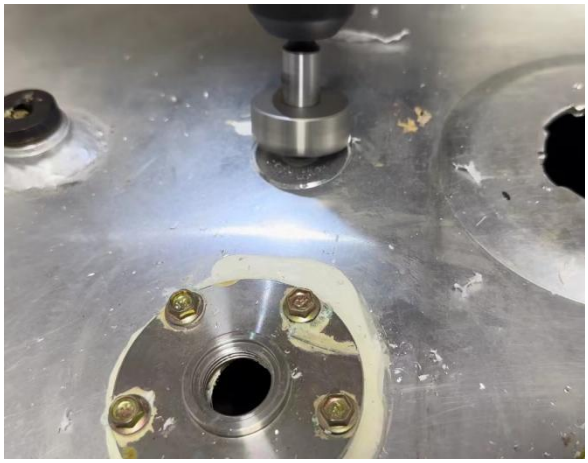
3.1. Step 1: Confirm the installation position of the oil rod: It must be installed at the exact center of the oil tank, as shown in the figure below.



3.2 Step 2: Mark the drilling positions with a marker pen;

3.3 Step 3: Drill the positioning hole. First, secure the 35mm or larger drill bit with a hand drill to mark the installation hole position on the fuel tank. After confirming the exact location, drill the hole. Ensure the drilling avoids internal obstructions such as the oil float, return oil pipe, and partition plates, maintaining a clearance of approximately 10cm in diameter.

3.4 Step 4: Prepare to drill the hole. When drilling, slightly tilt the drill to one side and drill through it first. Slow down the drill speed when the hole is about to be fully drilled, stopping when the opening is 95% complete. (Note: During drilling, watch out for aluminum chips to prevent them from falling into the oil tank and clogging it.)

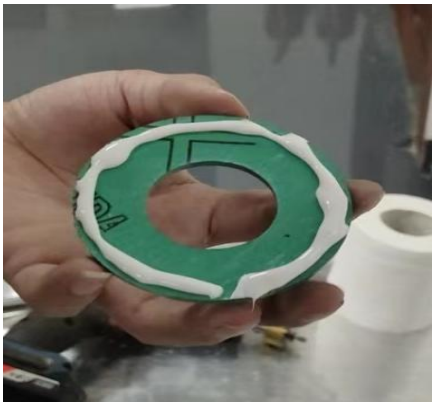
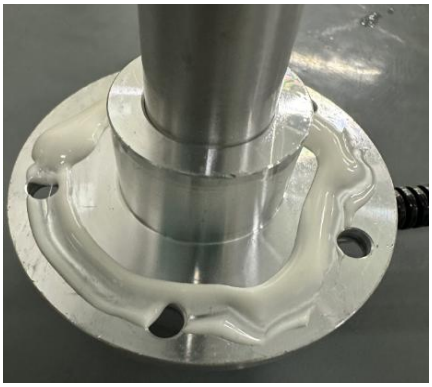



3.5 Step 5: Clean surface aluminum debris by using a sharp-nose pliers to remove the aluminum sheet to be drilled, preventing it from falling into the oil tank and clogging it.



3.6 Step 6: After drilling the hole, apply a thin layer of electronic sealant around the asbestos gasket and oil rod. This prevents overflow during installation when the assembly is compressed. Position the oil tank accordingly. See the diagram below.

3.7 Step 7: After inserting the

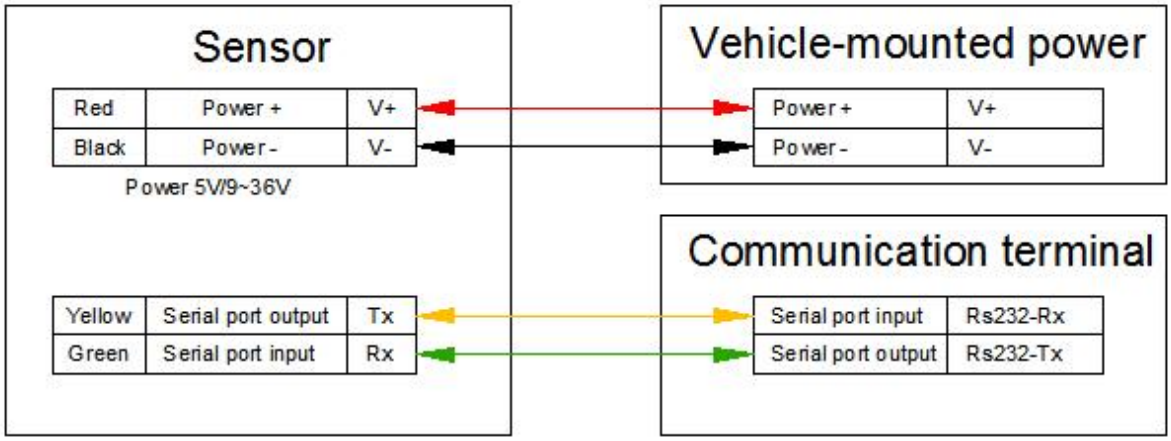
oil rod, secure it with screws. (Note: Before securing the oil rod, align the sensor wire end toward the fuel tank interior and the vehicle body.) Use a swivel tap to drill holes in the 5 screw holes on the oil rod and tighten the flange. See the figure below.



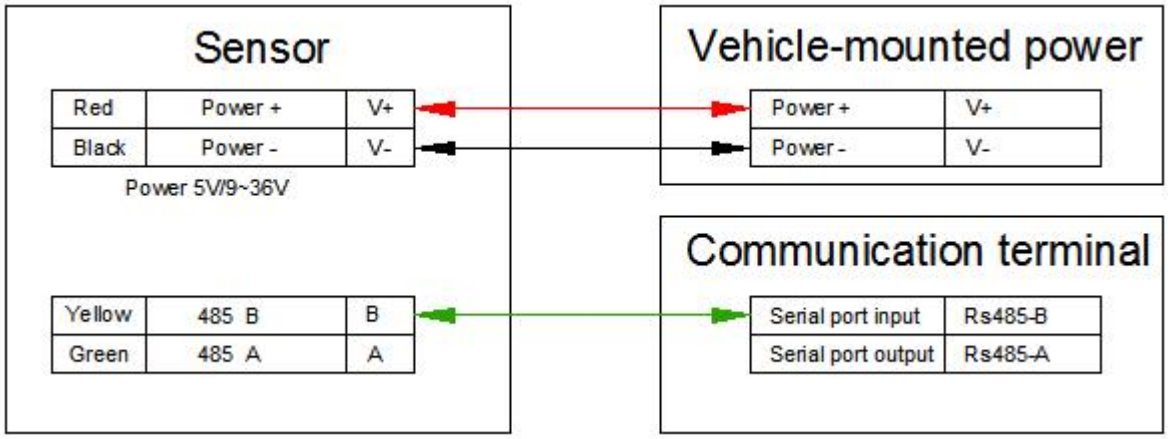
3.8: Step 8: After tightening, apply automotive electronic sealant to each of the 5 self-tapping screws to prevent oxidation, and complete the installation.


Connection definition:

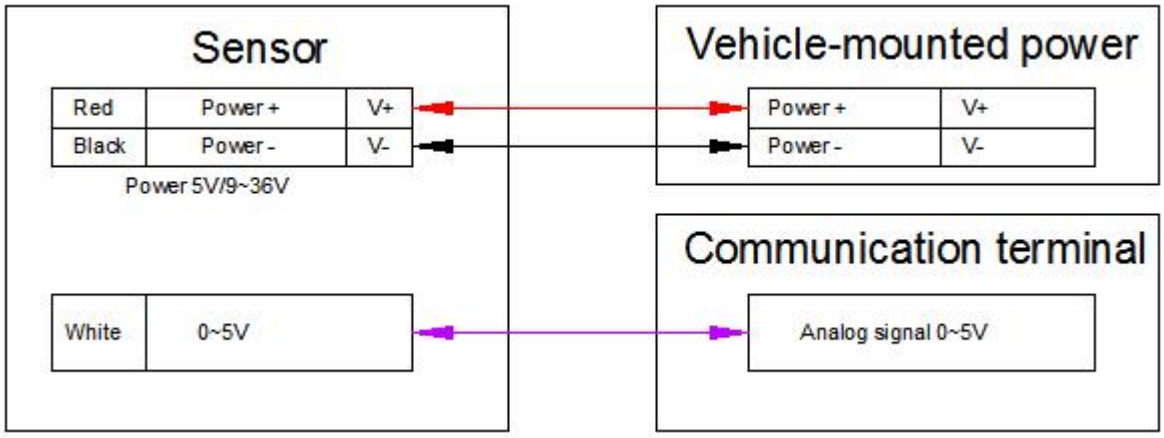
Rs-232



Rs485



Analog



3.10 Step 10: Connect to the vehicle. After removing the installation tools, connect the probe to a 6-meter extension cable, run the cable along the inner side of the vehicle's main frame, and pass it through the front hood into the passenger-side fuse box.

Wiring Notes:

• Keep away from fever and movable parts, at least 20cm away;

• Does not affect the vehicle's self-dumping bucket, front-end maintenance, and other functions;

• Secure the cable with a tie strap every 50 cm.

• To prevent the aviation connector from loosening, follow the diagram below: wrap 4-5 turns of black tape around the joint, leaving extra space on both sides for future maintenance or probe replacement.