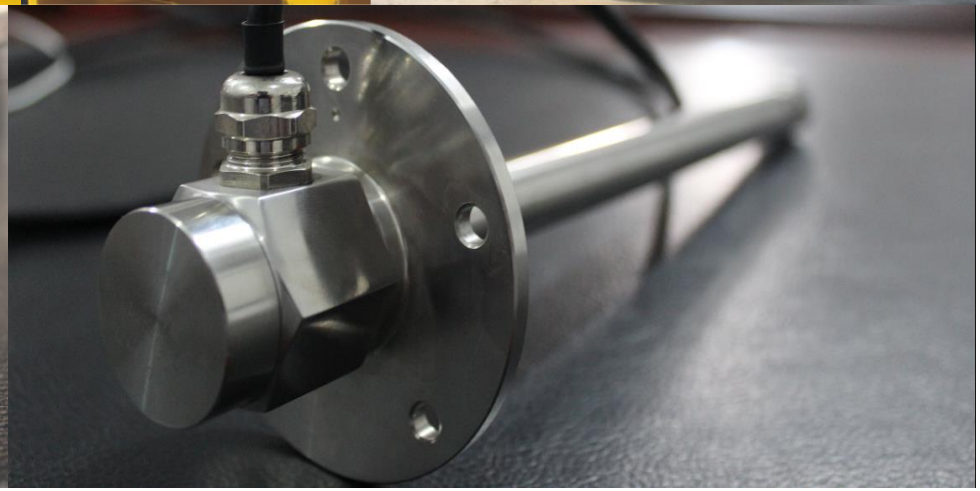
Capacitive Oil Level Solution

TOS-60 Series



Brief Introduction

TOS-606 series level transmitter is special designed for measuring level of all kinds of oil such as gasoline, diesel, hydraulic oil, etc. It applied in storage tank in rail, lorry, fuel tanks in all kinds of vehicles. It is also used to measure non-conductive and conductive media level with adverse working condition such as strong corrosion, high temperature, high toxic, explosion etc.

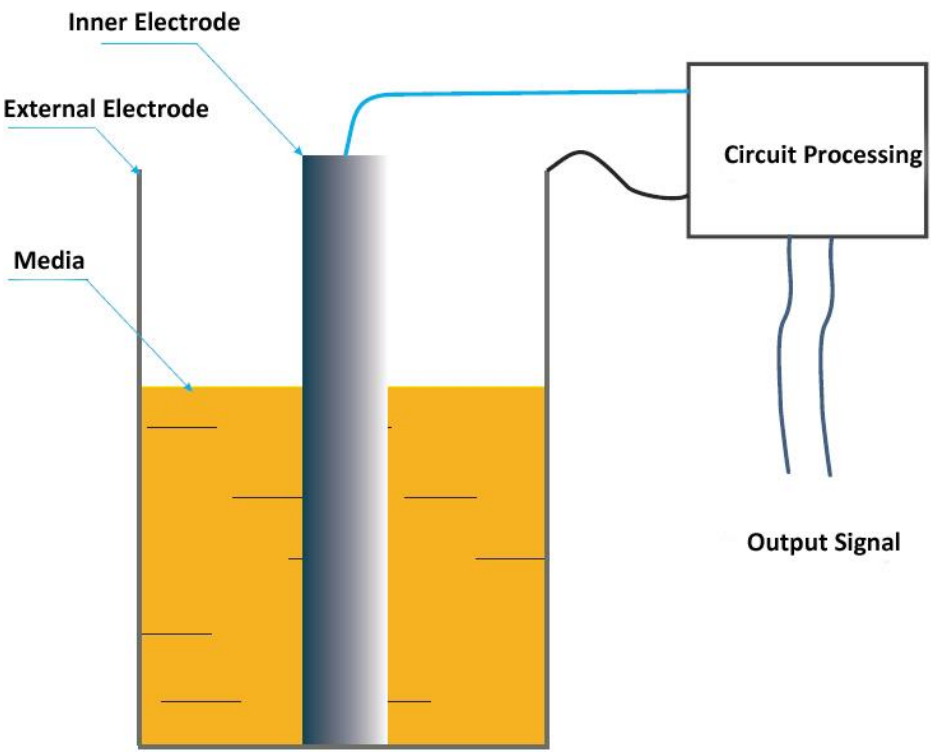
Based on radio frequency capacitance principle, adopted temography and dynamic analysis technology, the TOS-60 series Level Transmitter can calibrate automatically in different media without calibrating if the media is changed. It is able to get high accuracy 0.2% and have little temperature drift because of its temperature compensation.

Feature

- **2- wires Electric Current Loop**
- **Measuring System is isolated from the current loop**
- **Check media dielectric constant and temperature change with tomography technology and calibrate automatically when media changed**
- **High Accuracy and Stability.**

Working Principle

The structure of the probe is designed as concentric circles, consisting of Housing and Inner Core. There is a space between the Housing and the Inner Core where the media can be filled. The Dielectric Constant is quite different between the oil and the air. According to this, the difference of the dielectric constant can be measured by the sensor. Meanwhile, the volume of the media filled in the probe is related to the capacitance sensed by the probe. Processed by the advanced circuit and program of the sensor, the level of the media will be precisely measured.



General Technical Parameters

Universal Oil Level Transmitter

TOS-6062-1

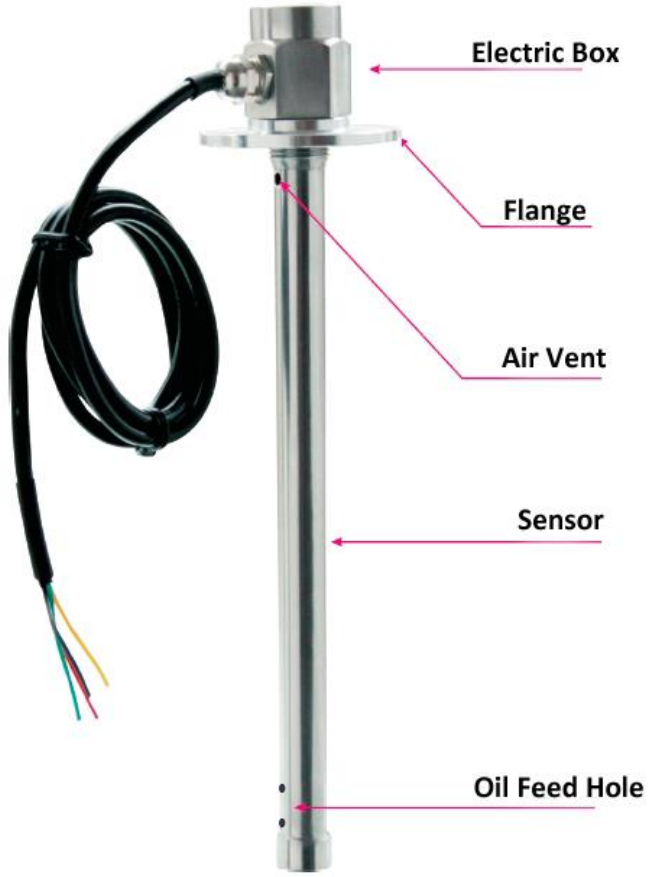
Based on the requirement, the specification of the universal type can be customized. The universal type is compatible with GPS, Diesel General Units, etc.

Leading Wire Info

Red	4~20mA+ (or 24V+)
Black	4~20mA- (or 24V-)
Yellow	RS232TXD (or RS485A) (or current output)
Blue / Green	RS232RXD(or RS485B) (or voltage output)

Technical Info

Measuring Range	**100~1400mm**
Acc.	0.5% F.S
Bearing Pressure (MPa)	- 0. 1~0. 6
Media Tempt. (^{0}C)	- 50~125
Output	4~20mA or 0~5V or 0~3.3V, or RS 485/232 or CAN
Power Supply	10~80VDC or 5~30VDC
Process Connection	Flange Connection/ Threaded Connection
Probe Diameter	Φ16
Explosion-Proof Class	Ex ia II CT6, Exd II CT5



Lubricating Oil Level Transmitter

TOS-6062-2

Tos-6062-2 series unit is specialized in the measurement of strong viscous media in high temperature condition

Technical Info

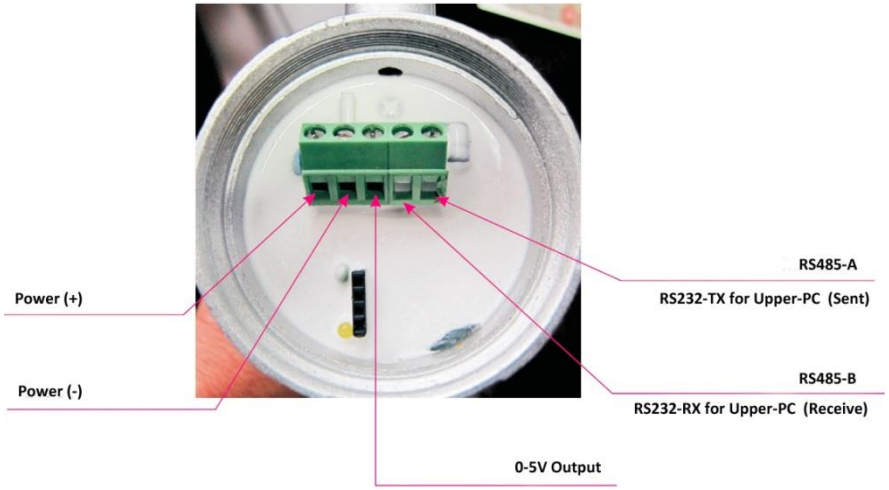
Measuring Range	100mm~1000mm
Acc.	0.5% F.S
Bearing Pressure (MPa)	-0.1MPa~2MPa
Media Tempt. (^{0}C)	-50~125
Output	4~20mA or 0~5V or RS 485/232 or CAN
Power Supply	10~80VDC
Process Connection	Flange Connection/ Threaded Connection
Probe Diameter	Φ19
Explosion-Proof Class	Ex ia II CT6, Exd II CT5

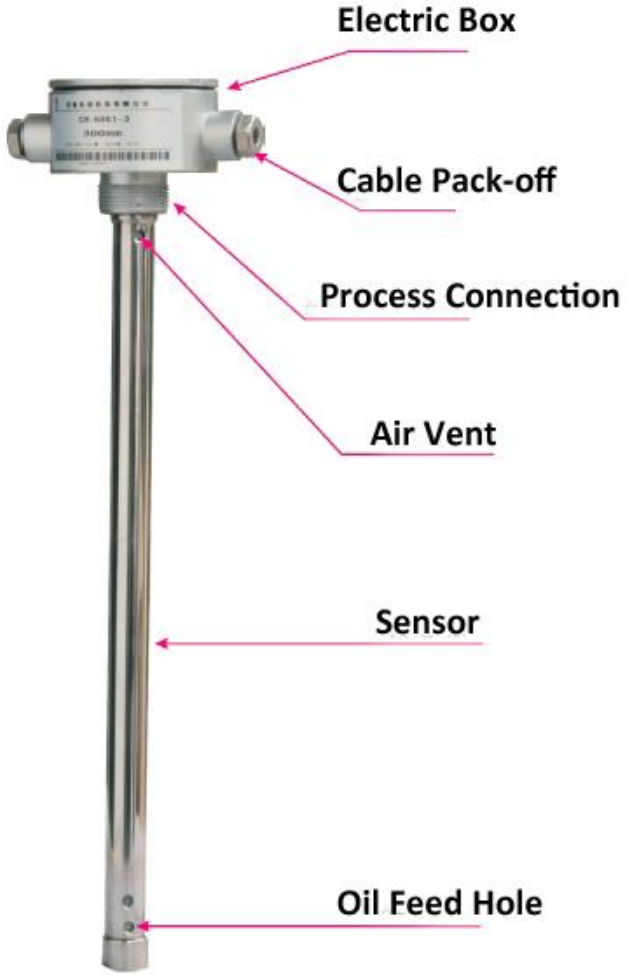
Multi-Output Oil Level Transmitter

TOS-6062-3

The signal of TOS-6062-3 can be output in 2 or more ways in the same time. RS232 / 485 and 0-5V DC can be performed in the same time for example. RS232 and RS 485 cannot exist in the same time.

Leading Wire Info





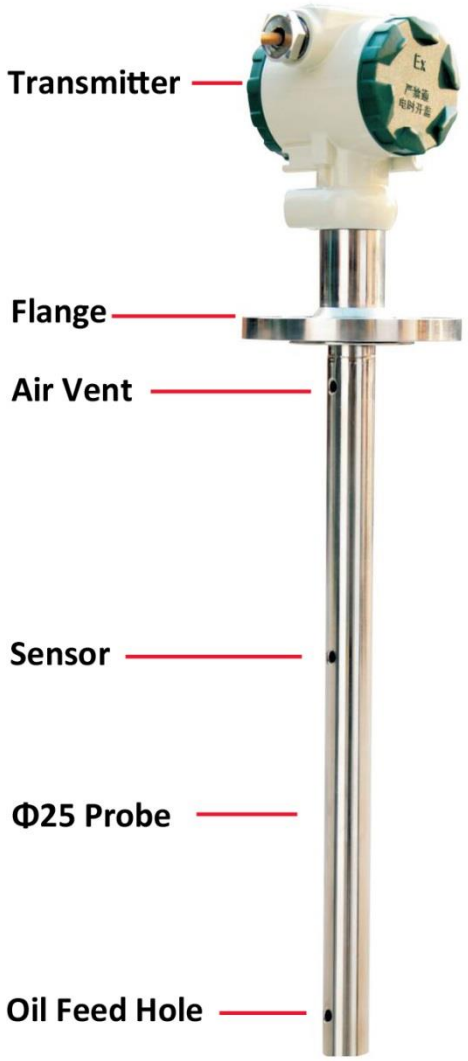
Industrial Capacitive Level Transmitter

TOS-60R

TOS-60R Series Unit is specialized in the application of Engineering Vehicles, Oil Tank Truck, Fuel Farm, etc. It is of High Accuracy and Resolution. Currently, TOS-60R is widely applied in China.

Technical Info

Measuring Range	**500~5000mm**
Bearing Pressure (MPa)	-0. 1~5
Ambient Tempt. (^{0}C)	-40~65
Resolution	0. 01mm
Probe Tempt. Bearing	-50~150
Probe Diameter	Φ25
Output	4~20mA or RS485
Power Supply	DC20~28V
Process Connection	Flange Connection/ Threaded Connection
Explosion-Proof Class	Exd II CT5
Acc.	0.2/0.5 F.S



Monitoring System (Optional)

Real-Time Fuel Consumption and Level Alarming

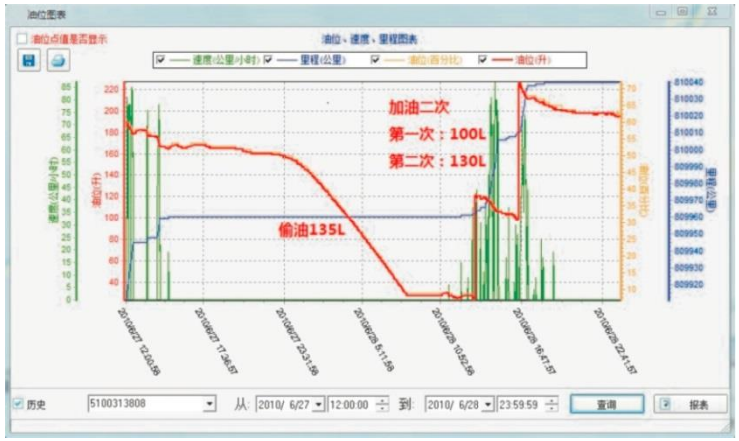
· Alarming can be sent in real-time via Software, SMS Message, Email, etc.

·The Location of the Tank in Abnormal Level Condition will be sent immediately in JPG format

· Wireless Cameras can be control by monitoring personnel when alarming received.

· Wireless Cameras can be triggered by the alarming.

Fuel Filling and Abnormal Condition Inquiry



Fuel Level Curve Analysis and Report

油位分析报告

HENAN CHANGRUN AUTOSYSTEM CO.,LTD

报表查询区间：【 】报表创建时间：【2010/8/12 19：23：32】

车辆名称	5100313808	司机联系信息1	15537178899

运行消耗

序号	开始日期时间	结束日期时间	运行时间	开始里程（英里）	结束里程（英里）	行车距离（英里）	Fuel Consumption
1	2010/6/27 12：00：58	2010/6/28 13：24：58	57m 24s	503362	503394	31	25.00
2	2010/6/28 13：28：57	2010/6/28 16：35：57	01h 05m 25s	503394	503424	29	23.00
3	2010/6/28 16：43：58	2010/6/28 23：58：57	42m 36s	503425	503443	17	23.00
总计：	运行时间：02h 45m 25s		行车距离：127.00（英里）		运行消耗：71（升）		

空转消耗

序号	开始日期时间	结束日期时间	空转时间	油耗（升）
1	2010/6/27 12：42：58	2010/6/27 13：30：58	48 m 00 s	3.00
2	2010/6/27 20：28：58	2010/6/27 21：28：58	59 m 59 s	4.00
3	2010/6/28 19：20：58	2010/6/28 20：47：58	01h 27 m 00 s	5.00
总计：	空转时长：03h 14m 59s		空转消耗：12（升）	

Application

1. Preparation: Tools and Material

2. Preparation: Device and accessories

3. Preparation: Cable and Ring

8. Drilling hole on the tank

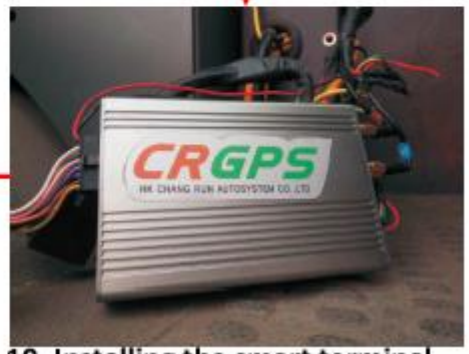
7. Smearing Sealing Material

6. Fix rubber pad

7. Flange Installation

8. Installing O-Ring on the sensor

9. Installing the sensor

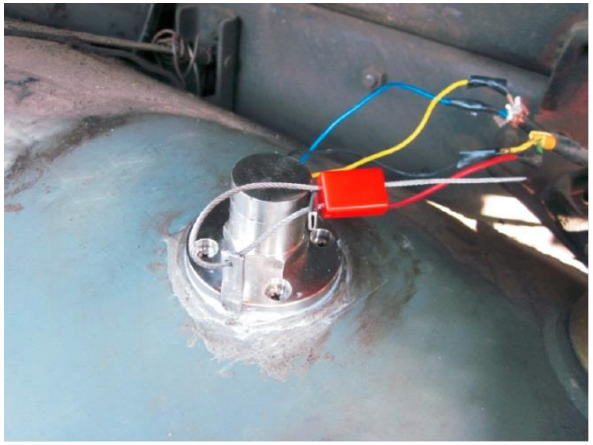


10. Installing the smart terminal Equipment

11. Calibration

12. Testing

TOS-6062-1



TOS-6062-1

TOS-60R

Order Guide

Capacitive Level Solution- TOS-6061, TOS-6062, TOS-60R

Code	Transducer Type				
1	Basic Type:100 ^{0}C, 0.6MPa, 0.5%				
2	Mini Type				
3	100 ^{0}C, 0.2%, 0.6MPa				
	Code	Output			
	C4	4-20mA			
	V2	0-5V			
	C3	RS485			
	V3	RS232			
		Code	Flange Specification		
		o	No Flange required		
		x	As required		
			Code	Measuring Range (mm)	
			X	As required	
1	C4	0	2000		***The whole Spec.***

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