INSTALLATION MANUAL

TIS WATER LEVEL SENSOR

Model: TIS-WTR-LVL-SNS

TIS CONTROL EVERYTHING

PRODUCT INFORMATION

Water Level Sensor is an extension and development of pressure transmitter technology, which achieves accurate measurement and transmission of liquid level height for water, oil, and paste based on the principle that the pressure generated by liquids of different densities at different heights is linearly related.

PRODUCT SPECIFICATIONS

	Working Mode		Static pressure type, input type
	Output Signal		420mA (Default), 010V, 05V, 110V, 15V, 0.54.5V (Customized), RS485
	Power	Max Power Consumption	0.5W≥
		Power Supply	12~36VDC (Default), 5VDC (Customized)
		Accuracy Class	0.5%FS (Default), 0.25%FS, 0.2%FS, 0.1%FS
	Temperature range	Medium Temperature	-10℃~50℃ (non-crystallizable)
		Ambient Temperature	-20℃~60℃
		Temperature Compensation	-10℃~70℃
		Temperature Drift	±0.02%FS/°C (within the temperature compensation range)
	Performance	Seismic Performance	10g (20...2000Hz)
		Stability Performance	±0.1%FS/Year
	IP Grade		IP68
	Dimensions	Width × Length × Height	25mm x 25mm x 107.5mm

BARCODE (UPC-A)

6 06795 20883 8

INSTALLATION MANUAL
TIS WATER LEVEL SENSOR
MODEL : TIS-WTR-LVL-SNS

Read Instructions

We recommend that you read this Instruction Manual before installation.

Safety instructions

Electrical equipment should only be installed and fitted by electrically skilled persons.
Failure to observe the instructions may cause damage to the device and other hazards.
These instructions are an integral part of the product and must remain with the end customer.

Programming

This device can be tested and programmed manually. Advanced programming requires TIS Device Search software. Advanced software programming knowledge should be obtained in the advanced training courses.

Simple Installation

DIN Rail mount facilitates installation. Fixing points are provided for installation without the use of DIN rail.

Mounting Location

Install in a dry, well-ventilated location. Controllers may emit some mechanical noise. Take this into account when deciding on a mounting location.

Data Cable

Use screened stranded RS485 data cable with four twisted pairs. Configure devices in a “Daisy Chain.”
Do not cut or terminate live data cables.

Warranty

There is a two-year warranty provided by law. The hologram warranty seal and product serial number are available on each device.

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SA, AUSTRALIA

TIS CONTROL LTD
Wanchai, Hong Kong

www.tiscontrol.com

WORKING PRINCIPLE

The principle of static pressure measurement:

When the Water Level Sensor is inserted into a certain depth of the measured liquid, The pressure formula for the sensor facing the liquid surface is: **P=p . g.H + Po**
PS:

P: The pressure on the Water Level Sensor

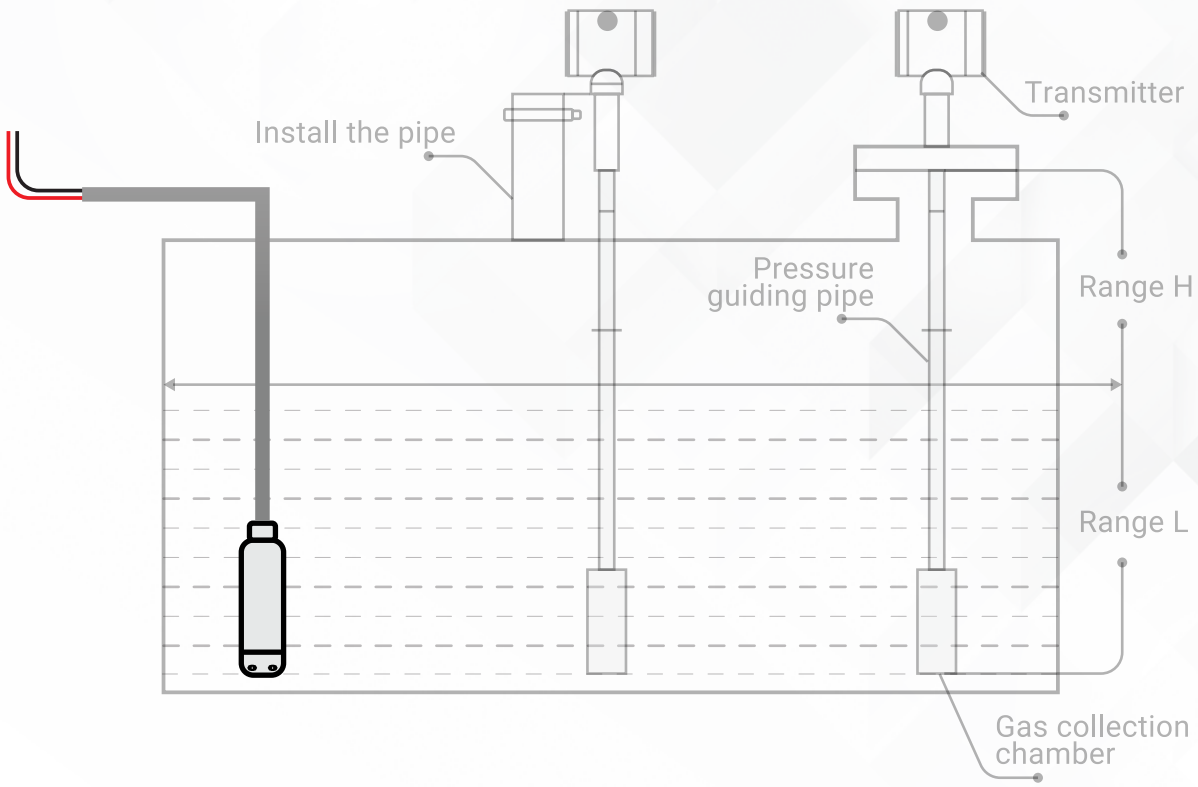
p: Density of the measured liquid

g: local gravitational acceleration

Po: Atmospheric pressure on the liquid surface

H: The depth at which the sensor is inserted into the liquid

At the same time, the pressure of the liquid is introduced into the positive pressure chamber of the sensor through gas conducting stainless steel, and the atmospheric pressure Po on the liquid surface is connected to the negative pressure chamber of the sensor to counteract the Po on the back of the sensor, so that the pressure measured by the sensor is: p . g. H , obviously, by measuring the pressure P, the depth of the liquid level can be obtained.



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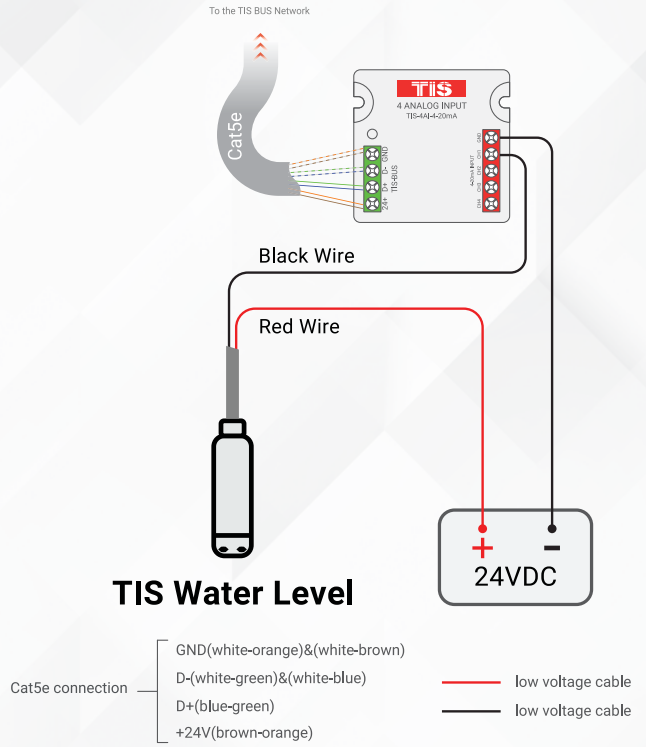
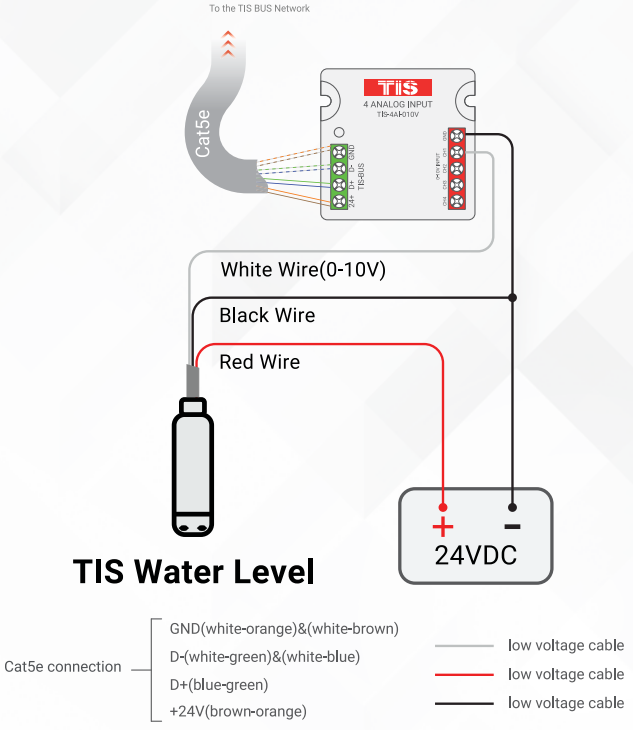
INSTALLATION STEPS

1 4-20 mA Current Loop Connection.



2 0-5V / 0-10V Voltage Signal Connection.



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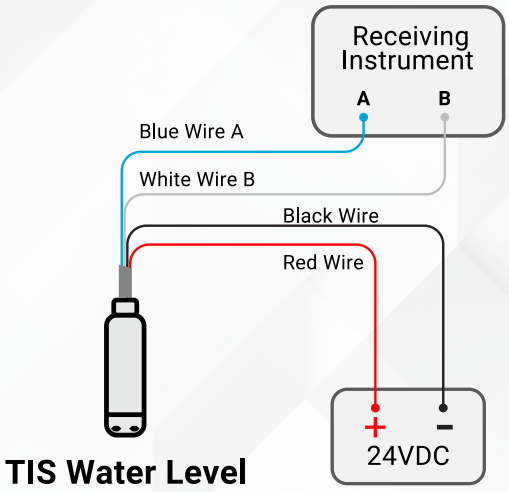
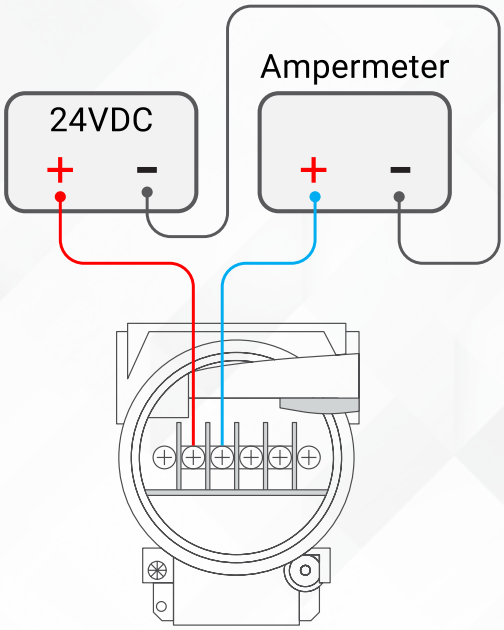
INSTALLATION STEPS

3 RS485 Communication Wiring.



4 IECEx 4-20 mA Two-Wire Loop Setup.



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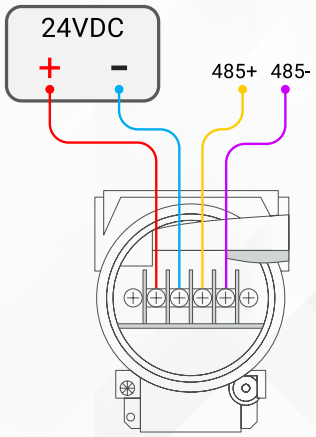
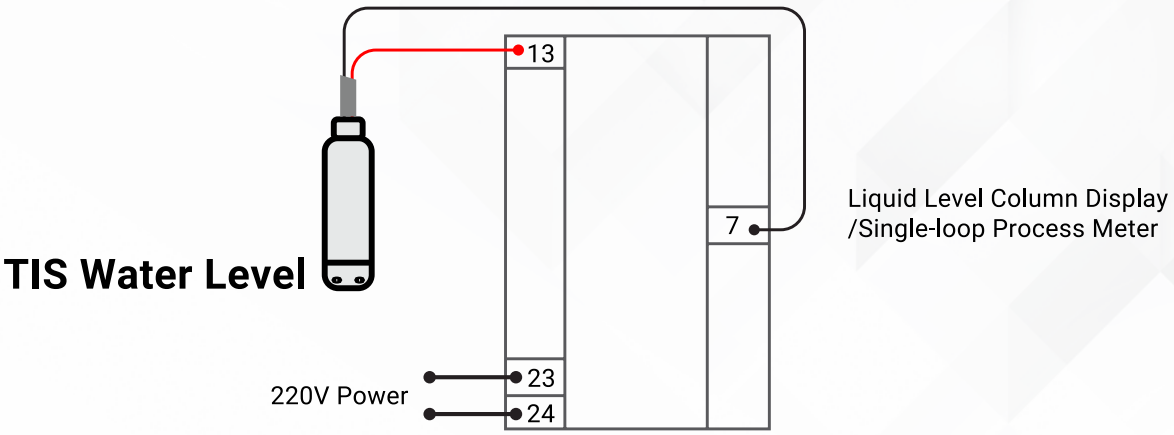
INSTALLATION STEPS

5 IECEx RS485 Communication Integration.



6 Connection to Unified Liquid Level Column Display.



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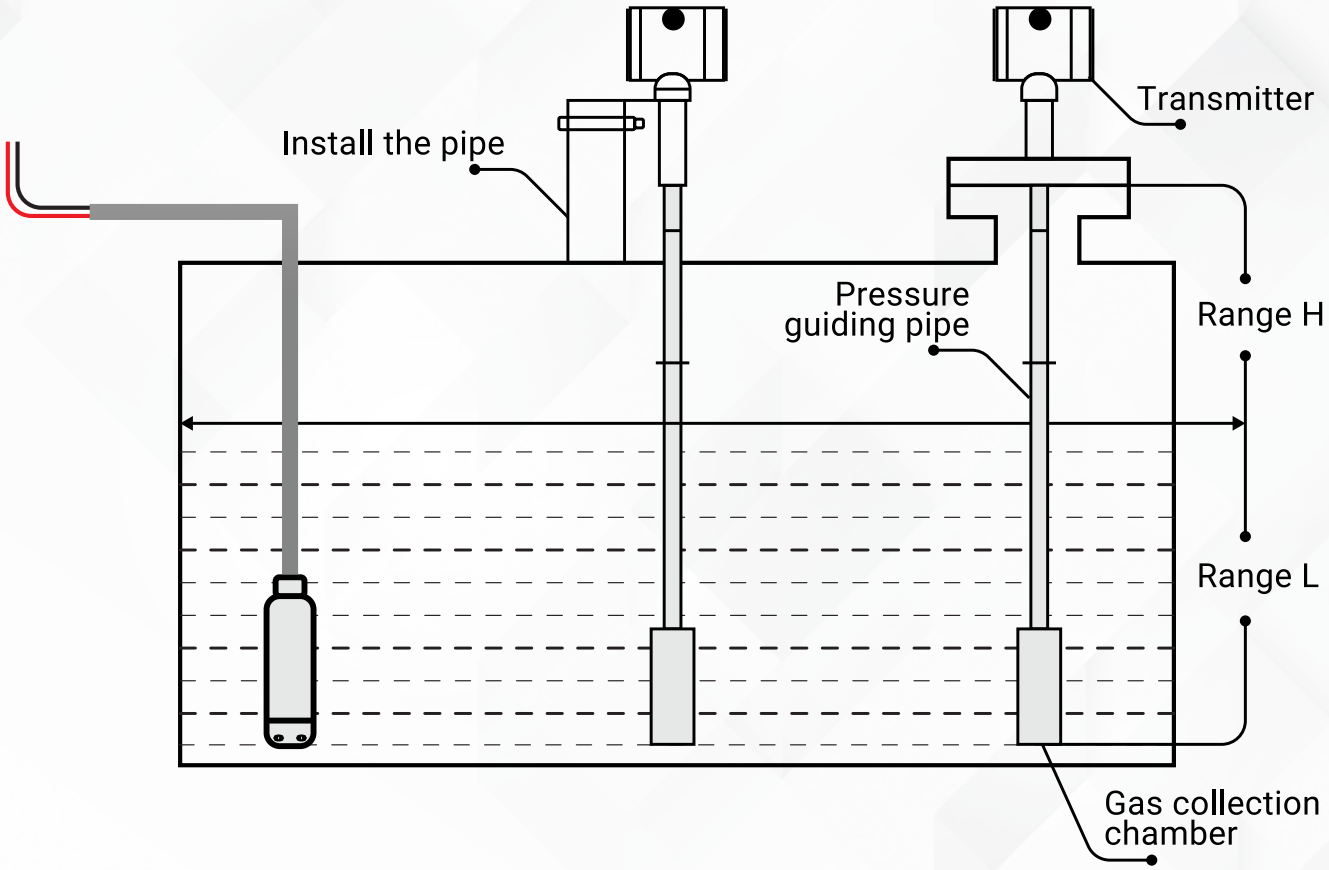
INSTALLATION SCHEMATIC DIAGRAM

The wiring port should be placed in a dry area outside the container.
The air pipe should be well protected and must not come into contact with water.



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PRECAUTIONS FOR USE

- The equipment must be installed in an open container and without power supply.
- It is prohibited to measure materials that are incompatible with the materials in contact with the transmitter.
- No modifications or changes can be made on the device.
- This product belongs to weak curent equipment. When wiring, ensure that the pressure source and power supply of the transmitter are disconnected to prevent accidents caused by medium spraying.
- When measuring containers with sediment, the installation position of the probe should be 5 centimeters away from the bottom to prevent sediment from blocking the water intake hole.
- When measuring high-temperature liquids, the medium temperature should not exceed the operating temperature limit of the transmitter. If necessary, armored liquid level should be selected.
- When installing extended wiring, the joint of the extended wire should be placed in a dry place outside the container and protected by a red breathable tube, avoiding contact with water.
- Ensure that the power supply voltage meets the power supply requirements of the transmitter and that the liguid level is within the range of the transmitter.
- Sensors are precision devices. Users should not disassemble them themselves or touch the membrane to avoid product damage.

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