KANAGAWA INSTRUMENTS

Hydrostatic Level Transmitter

Model: KHLT

Features

- Piezoresistive diffusion silicon pressure sensor
- Immersion probe measurement, easy to install
- For level measurement
- Multi-protective structure design, high protection ability
- LCD option
- Variety of styles, suitable for various industrial applications
- Anti-corrosion stainless steel material adopted, suitable for many occasions

Applications

- Static pressure level, liquid irrigation, sewage, industrial water, pool, well, river, seawater, lake, etc

Notes:

1 Do not touch the diaphragm with hard objects, which may cause damage to the diaphragm.

2 Please read the Instruction Manual of the product carefully before installation and check the relevant information of the product.

3 Strictly follow the wiring method for wiring; otherwise, it may cause product damage or other potential faults.



Product overview

The KHLT Intelligent Submersible Level Transmitter adopts the high-performance diffusion silicon piezoresistive pressure sensor as the measuring element, and accurately measures static pressure of the liquid proportional to the level depth; The mV signal result is converted to standard current or voltage signal output through the dedicated integrated circuit, establishing the linear corresponding relation between the output signal and liquid depth to complete the measurement for the liquid depth. KHLT has the advantages of high precision and small volume. By submerging it directly into liquid, the height from the end of the transmitter to the liquid surface can be measured easily. The product is applicable to the level measurement and control in the petroleum, chemical, power plant, urban water supply, and hydrological exploration fields.

This product, with stable and reliable performance, has passed long-term aging and stability testing and can be used in harsh outdoor environments. Meanwhile, on-site liquid level display and zero and span migration functions can be performed. The Hart and RS-485 protocols are available.

Notes:

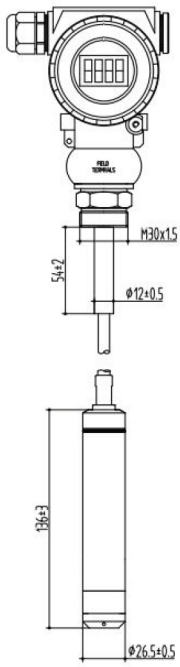
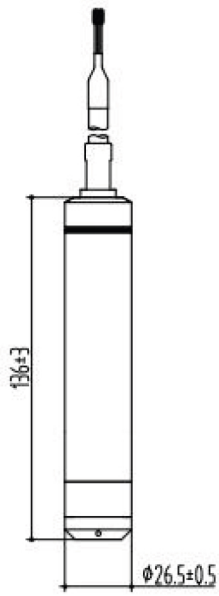
1 Do not misuse documentation.

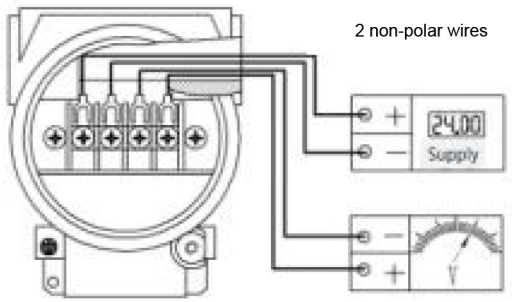
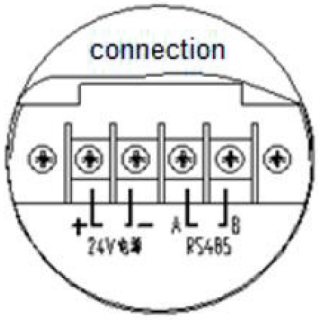
2 The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.

3 Complete installation, operation, and maintenance information is provided in the instructions of the product.

4 Misuse of the product may cause danger or personal injury.

Performance parameters				
Pressure range	0~1m…5m…200mH2O			
	Other pressure range can be customized			
Supply & output signal	18~30V; 4~20mA+Hart (with display)			
	12~30V; RS485-MODBUS output (cable outlet)			
	12~30V; 4~20mA+RS485-MODBUS output (with display)			
Operating temp.	-20℃~85℃			
Medium temp.	-10℃~70℃			
Storage temp.	-40℃~125℃			
Zero temp. coefficient	Range	±1.5%FS (-10~70℃)	Range	±3%FS (0~60℃)
Span temp. coefficient	>4mH2O	±1.5%FS (-10~70℃)	1~4mH2O	±3%FS (0~60℃)
Overload pressure	200%FS~300%FS			
Mechanical vibration	20g, 25Hz~2kHz; IEC 60068-2-6			
Shock	10g/11ms; IEC 60068-2-27			
Overall accuracy	≤±0.5%FS (Range>1mH20); ≤±1%FS (Range:1mH20),Opt. ±0.2%			
Insulation	RS485: 100MΩ/250VDC			
	4~20mA+HART: 50MΩ/100VDC			
Long-term stability	±0.2%FS/year			
Protection	IP68			
Material	stainless steel for level probe			
	Polyethylene wires for cable			
	Polyoxymethylene cover cap for diaphragm (optional)			
Medium compatibility	All kinds of media compatible with stainless steel 304			

Electrical connection and wiring method		
Code	**KHLT : 2088 housing with display**	**KHLT : Cable outlet**
Dimension In mm		

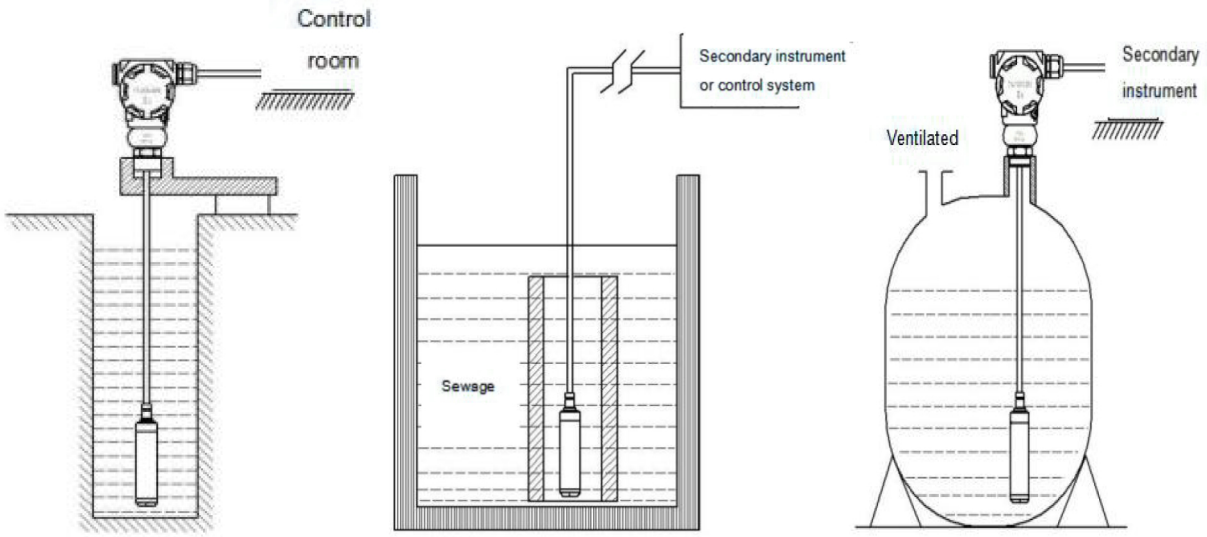
Wiring method (4~20mA+HART)		Red wire: Vin Green wire: Iout
Wiring method (RS485-MODBUS)		Red wire: V+ Green wire: V- Yellow wire: RS485-A White wire: RS485-B

Product selection and installation instructions (for reference only)

1. Product selection

It is recommended to use the level transmitter with the 2088 housing for outdoor conditions. If a direct-lead level transmitter is selected for outdoor conditions, the terminal must be sealed in a waterproof junction box or protected by other sealing measures.

2. Installation in still water (deep wells, pools, liquid tanks, etc.)



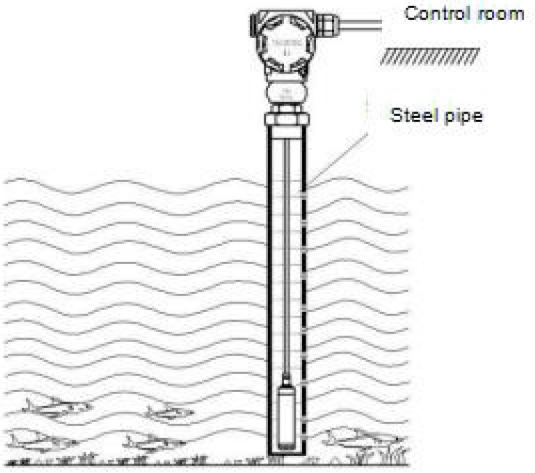
Installation tips:

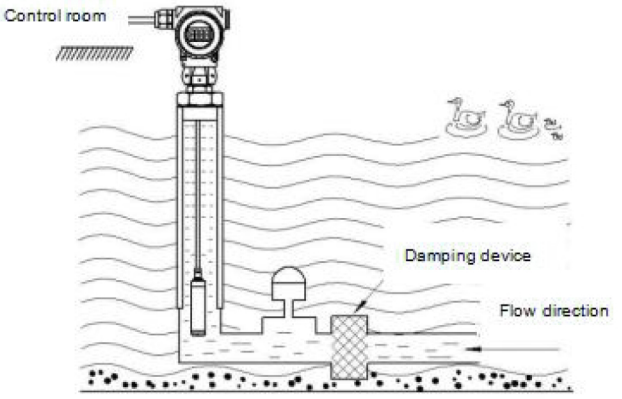
(1) When measuring the level of stationary fluid in an open container, place the level transmitter vertically into the bottom of the container and secure the cable connecting the transmitter to the junction box at the opening of the container.

(2) When the medium viscosity is relatively large (such as the sewage pool), a casing or bracket can be installed to ensure that the transmitter can be put into the bottom of the container.

(3) For outdoor installations, the terminal box of the transmitter should be placed in a ventilated and dry area, and avoid direct exposure to sunlight and rain to prevent excessive housing temperature or water ingress, which could damage the internal circuit board.

2. Installation in moving water (rivers, lakes, etc.)





Installation tips:

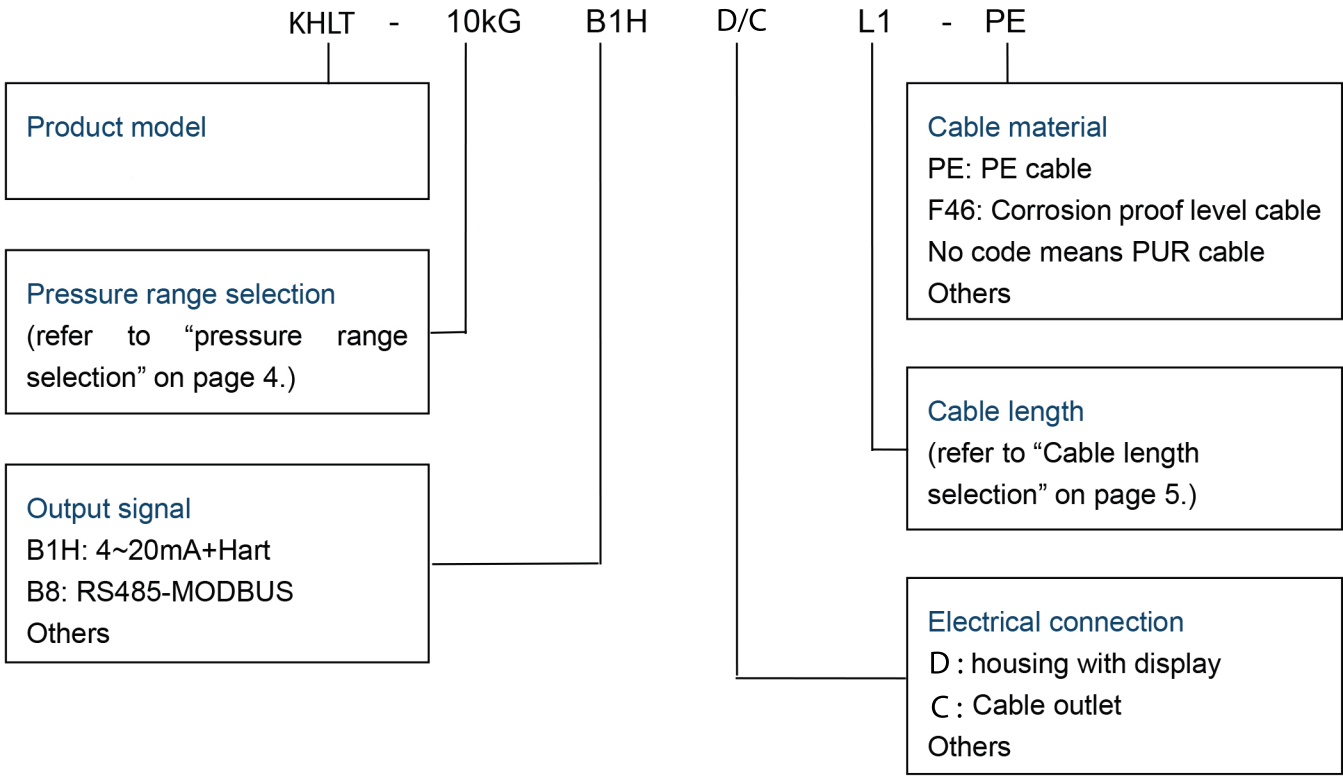
(1) When measuring the water level in flowing water, when the medium fluctuates greatly, a steel pipe with an inner diameter of about 5cm can be inserted in the water channel. Make several holes of about Φ5 in diameter on the side of the immersed pipe opposite to the flow direction to allow water to enter the pipe and fix the cable and junction box at the outlet of the pipe.

(2) When the medium of the water channel fluctuates greatly, or the sediment is large, a damping device can be installed to filter the sediment, eliminate the adverse effects of dynamic pressure and waves, and ensure the measurement accuracy.

Pressure range selection					
Pressure range	**Pressure reference**	**Pressure range code**	**Overload pressure**	**Burst pressure**	**Note**
≤1m H2O	G	10kG	300％FS	600％FS	
<4m H2O	G	35kG	300％FS	600％FS	
<7m H2O	G	70kG	300％FS	600％FS	
≤12m H2O	G	100kG	300％FS	600％FS	
≤18m H2O	G	160kG	300％FS	600％FS	
≤20m H2O	G	250kG	300％FS	600％FS	

Cable length selection			
Pressure range code	**Standard cable length**	**Code**	**Definition**
10kG	Cable length 1 meter	L1	Fill in as an optional accessory if the length exceeds.
35kG	Cable length 1 meter	L1	
70kG	Cable length 1 meter	L1	
100kG	Cable length 1 meter	L1	
160kG	Cable length 1 meter	L1	
250kG	Cable length 1 meter	L1	

How to order



Example: KHLT -10kGB1HJ3L1-PE

Product model: KHLT Pressure range: 10kPa, gauge pressure, output signal 4~20mA+Hart, electrical connection: cable outlet, 1m PE cable.

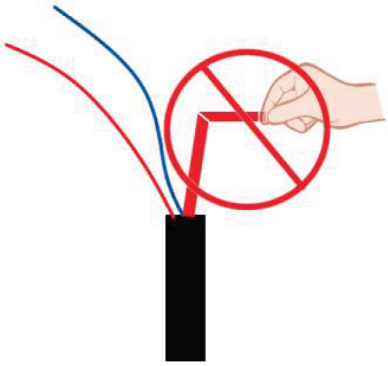
Note: The cable is PUR cable if not specified.

Optional accessories

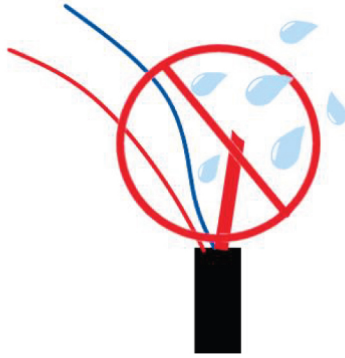
1 The part of cable exceeding the standard cable length
2 KHLT anti-blocking protective cover (with filter)
3 Protective cap vent baffle

Notes

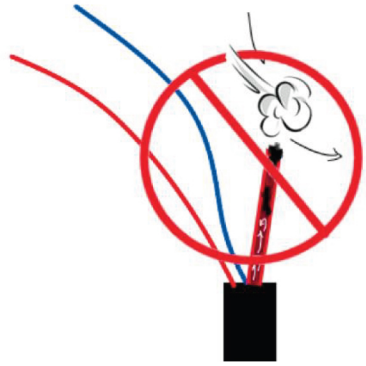
The air duct of the liquid level transmitter needs to remain open to the atmosphere. During operation, ensure that the duct is not blocked or bent. Additionally, proper waterproof and dustproof measures should be applied to the air duct; otherwise, it may impair transmitter performance and cause damage to the device.



Do Not Bend



Do Not Expose to Rain or Water



No Dust Blockage

Kanagawa reserves the right to make any change in this publication without notice. The information provided is believed to be accurate and reliable as of this product sheet.

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