YANTAI PWLS

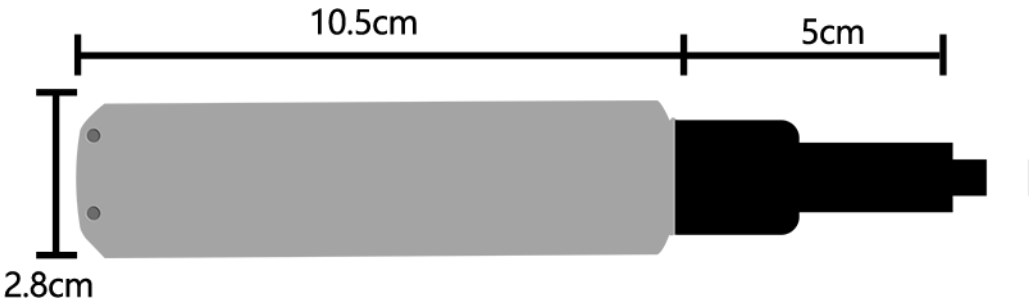
The PWLS Pressure Water Level Sensor uses a silicon piezoresistive level transmitter to encapsulate the OEM oil-filled core in a stainless steel housing. The front protective cap protects the sensor diaphragm and also allows the liquid to smoothly contact the diaphragm and is waterproof The wire is connected with the shell in a sealed manner, the vent pipe is connected with the outside in the cable, and the internal structure is designed to prevent condensation. Built-in micro-signal processing circuit for remote transmission. Has good stability and reliability.

Advantage of PLS

√Rubber ring waterproof seal
√ Various structure sizes, minimum ϕ19mm
√ Anti-condensation
√ Good long-term stability

Technical Data

Measuring medium	Liquid
Measuring range	0-5,10,15,20,25,30m
Output signal	RS485
Power supply	DC12～24V
Accuracy	0.05%FS
Resolution	0.001 m.
Ambient temperature	-10℃～80℃
Storage temperature	-25℃～80℃
Overload capacity	150%FS
Structural materials	Shell stainless steel
Degree of protection	IP68
Cable	2m
Stability performance	±0.05%FS/year
Zero temperature	±0.01%FS/℃



Wiring Method

1	2	3	4
Power supply positive	Power supply negative	485A	485B
Red V+	Black V-	Yellow A	Blue B

MODBUS pressure transmitter communication protocol

I. Overview:

This protocol complies with the MODBUS communication protocol and adopts the subset RTU mode in the MODBUS protocol. RS485 half-duplex working mode.

2. **Serial data format**:

Serial port settings: no parity, 8 bits of data, 1 stop bit.

Example: 9600,N,8,1 Meaning: 9600bps, no parity, 8 data bits, 1 stop bit.

The serial port baud rates supported by this transmitter are: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200

CRC check polynomial: 0xA001.

The data in the data communication process is all processed as double-byte signed integer data.If the data identifies a floating point number, the decimal point must be read to determine the size of the data.

3. Communication format:

1.Example of read command format (03 function code)

A.Send read command format:

Address	Function code	Data start (H)	Data start (L)	Number of data (H)	The number of data (L)	CRC16 (L)	CRC16 (H)
0X01	0X03	0X00	0X00	0X00	0X01	0X84	0X0A

B.Return to read data format: example

Address	Function code	Data length	Data (H)	Data (L)	CRC16 (L)	CRC16 (H)
0X01	0X03	0X02	0X00	0X01	0X79	0X84

2.Write command format (06 function code) example

Address	Function code	Data start (H)	Data start (L)	Data (H)	Data (L)	CRC16 (L)	CRC16 (H)
0X01	0X06	0X00	0X00	0X00	0X02	0X08	0X0B

B.Return to read data format: example

Address	Function code	Data start (H)	Data start (L)	Data (H)	Data (L)	CRC16 (L)	CRC16 (H)
0X01	0X06	0X00	0X00	0X00	0X02	0X08	0X0B

3.Abnormal response return

Address	Function code	Exception code	CRC16(L)	CRC16 (H)
0X01	0X80 + Function code	0x01(Illegal function) 0x02(Illegal data address) 0x03(Illegal data)		

4. Supported commands and the meaning of commands and data: MODBUS-RTU protocol command list is as follows:

For Example: (Read data) 01 03 0000 0001 840A (Read address)

Adress Function code Starting address Number of data CRC

For Example(Write data) 01 06 0000 0002 C9F8 (Wirte address, 1 changed to 2)

Original address Function code Starting address Address to be changed CRC

Function code	Data start address	Data number	Data byte	Data range	Instruction meaning
0x03 Function code read data					
0x03	0x0000	1	2	1-255	Read slave address 010300000001840A
0x03	0x0001	1	2	0-1200 1-2400 2-4800 3-9600 4-19200 5-38400 6-57600 7-115200	Baud rate reading 010300010001D5CA
0x03	0x0003	1	2	0-#### 1-###.# 2-##.## 3-#.###	The decimal point represents 0-3 decimal points 010300030001740A

0x03	0x0002	1	2	0- Mpa 1- Kpa 2- Pa 3- Bar 4- Mbar 5- kg/cm^2 6- psi 7- mh^2o 8- mmh^2o	Pressure unit 01030002000125CA
0x03	0x0004	1	2	-32768-32767	Measurement output value 010300040001C5CB
0x03	0x0005	1	2	-32768-32767	Transmitter range zero point 010300050001940B
0x03	0x0006	1	2	-32768-32767	Transmitter range full point 010300060001640B
0x03	0x000c	1	2	-32768-32767	Zero offset value, The factory value is generally 0 0103000C00014409
0x06 Function code write data					
0x06	0x0000		2	1-255	Rewrite slave address 010600000002C9F8
0x06	0x0001		2	0-1200 1-2400 2-4800 3-9600	Modify the baud rate 010600010000D80A 01060001000119CA 01060001000259CB

				4-19200 5-38400 6-57600 7-115200	0106000100039808 010600010004D9C9 0106000100051809 0106000100065808 01060001000799C8
0x06	0x00 0c		2	-32768-32767	Zero offset value. Pressure output value = calibration measurement Value + zero offset value
Save and restore the factory					
0x06	0x00 0F		2	0- Save to user area	0106000F0000B9C9
0X06	0x00 10		2	1- Return to factory parameters	01060010000149CF

Handan Yantai Import and Export Co., Ltd.

Room 102, Floor 1, Block C, Building 1, No. 19, Hexie Street,

Handan Economic Development Zone, Hebei Province.China