

# Submersible Water Level Sensor

## Level Measurement in river, sewage and lakes

### ZAXWEL Series

#### ► Features

- 316L stainless steel diaphragm
- 0.25% F.S
- Level ranges from 50cm to 600m
- Anti-interference ,long-term stability
- IP68 full sealed plastic waterproof design
- Wide range,available to Gauge,Absolute and sealed gauge type
- -35°C~125 °C Wide working temp scope
- Long time working at low temperate -30°C
- EMI/RFI Rejection
- Over voltage ,Reverse Polarity and short circuit protection
- Customers can customize PU,PE or PTFE cable lengths



#### ► Applications

- Level Measurement in rivers
- Level Measurement in sewage
- Surface water monitoring
- Deep well and groundwater monitoring
- Sea water level measurement and control
- Irrigation equipment
- Level measurement in pumping station



#### ► Product Description

APT300 level transmitter has the special structure and applications. It has high accuracy, small volume, stability, plus resistance to abrasion, oil, acid & alkali and high intensity gas lead cable ensured that it can meet the different occasions measurement requirements. It is widely used in sewage, river and lakes treatment as well as channel, large rivers, 1 reservoirs and coastline monitoring. This product has got intrinsic safety certification, explosion proof certification and CE certification. The lead of two-wire circumfluent is no-polarity.

#### ► Specifications

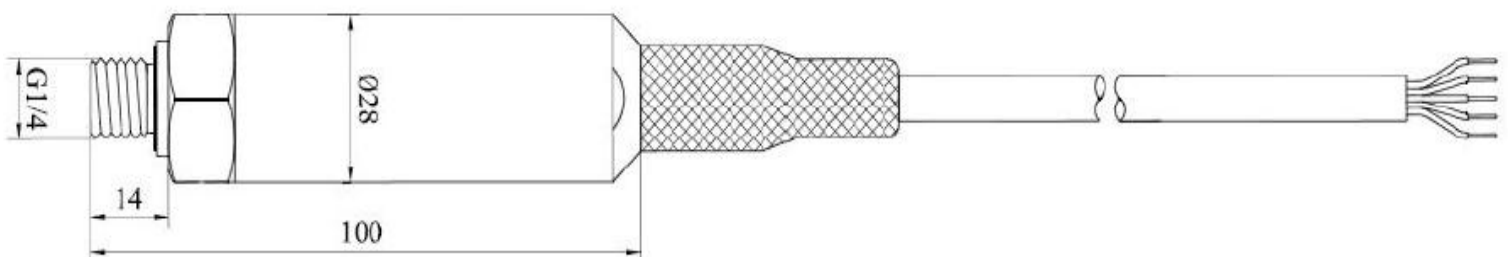
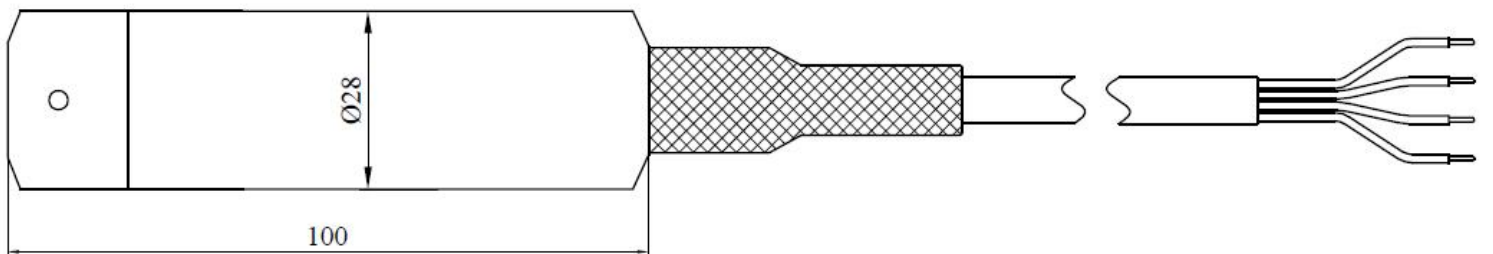
Ambient Temperature: 25°C (unless specified)

Parameter	Data	
Pressure Range	0~0.01....10MPa / 0-0.5M.....500mH <sub>2</sub> O	
Pressure type	gauge (G), absolute (A)	
Over pressure	200%FS	
Burst pressure	300%FS	
Electronic Wire	2 Wires	3 Wires

Output signal	4~20mA	0~5VDC	1~5VDC	0~10VDC	0.5~4.5VDC	0.5~4.5 V radio metric	RS485 Modbus RTU
Power Supply	12 ~ 30VDC, typical value: 24VDC	10~30 VDC	10~30VDC	12~30VDC	5 V DC	5 V DC±5%	10-30VDC/ 3-5VDC
Accuracy (including: nonlinearity, repeatability, hysteresis, zero drift, full drift)	≤0.1%FS    ≤0.15%    ≤0.2%FS    ≤0.25%FS    ≤0.5%FS(max.)						
Long-term stability	≤0.2%FS/year						
Working Temp	-25°C~85°C		-40°C~100°C(Customized)				
Storage Temp	-40°C~125°C						
Temperature Compensation	-10°C~80°C (Standard)						
Temp.coefficient of zero	±0.1%FS/°C						
Temp.coefficient of span	±0.05%FS/°C						
Insulating resistance	100MΩ@250VDC						
Medium compatible	Water or Compatible with 316L Stainless Steel						
Short circuit protected	Yes						
Reverse polarity protection	Yes						
Electronic connection	Fixed cable and water proof IP68						
Pressure interface	Gage pressure; Sealed gage and absolute opional						
Material of pressure membrane	316L stainless steel						
Response time(10%~90%)	≤10msec(Rises to 90%FS)						
Vibration Shock	10g/5~2kHz, axes X/Y/Z/20g half sine 11ms						
Water Proof	IP68						
Cable optional	PE cable( Water proof ); PUR cable( Oil Proof ); PTFE Cable( Anti-Corrosive)						
Certificate approving	CE Certificate available.						
EMC Standard	EN 61326-1:2013; EN 61326-2-3:2013 EN 61000-6-2:2005; EN61000-6-4:2007+A1						
Weight	Net weight is about 0.35KG, Full Packing weight is about 1.0KG (Included 2 Meters Cable)						

## ➤ Dimensions(mm)

The diameter can be customized to 30mm



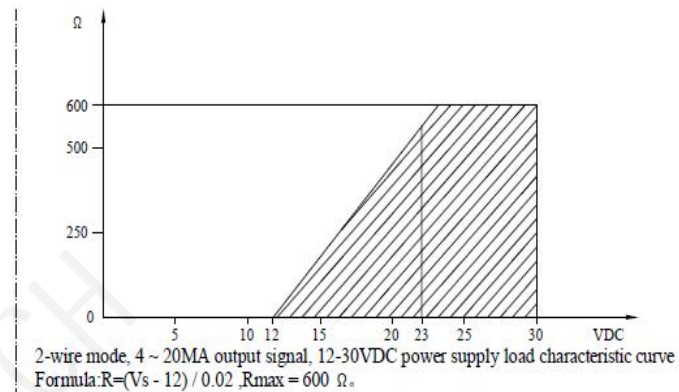
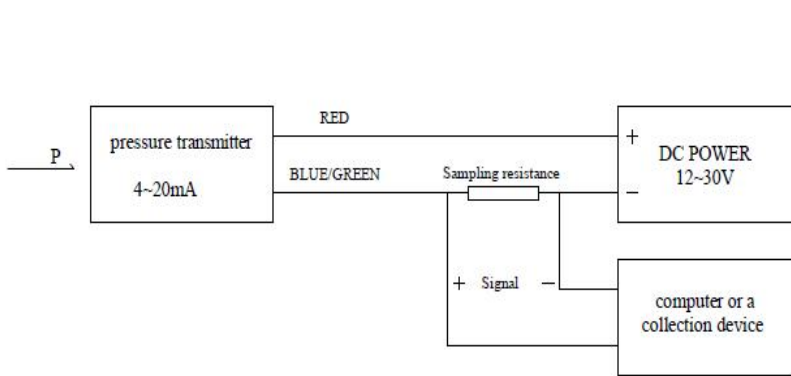
## ➤ Electronic Connections

Look down from the top

Directly sealed cable											
Current				Voltage				RS485 RTU Modbus			
RED	BLUE	YELLOW		RED	BLUE	BLACK	YELLOW	RED	BLUE	BLACK	GREEN
VCC	Iout(S+)	Shield(Earth)		VCC	Vout(S+)	GND	Shield(Earth)	VCC	RS485B	GND	RS485A

OUTPUT=Signal, VCC=Power Supply, GND=VCC-&S,Shield=Earth

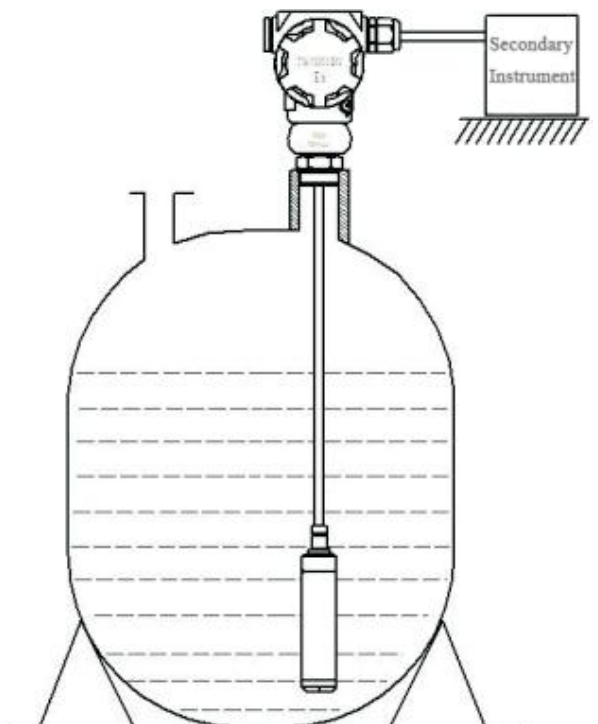
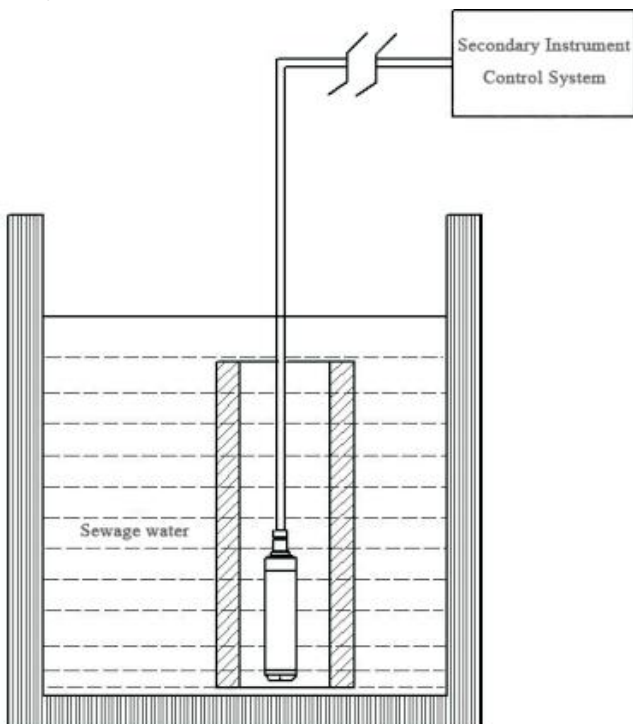
## ➤ Sample plot and output characteristic plot



## ➤ Schematic diagram of common installation method

### Installation notes:

1. When the viscosity of medium is bigger (such as sewage pool), can be mounted to the casing or support, to ensure the transmitter can be put into the bottom of the container.
2. Outdoor installation, should put the junction box in dry and ventilated place as far as possible, avoid bright lights illuminating directly and raining so as to the shell with high temperature or water inflow, and finally the internal circuit board will be damaged.



# Ordering code

## How to Order

ZAXWEL 31-	<b>Submersible Water Transmitter</b>								
	<b>Code</b>	<b>Pressure range</b>							
	X	X is the required range in 0~0.01....10MPa / 0-0.5M.....500mH2O							
		<b>Code Accuracy</b>							
	01	0.1%FS							
	02	0.2%FS							
	03	0.25%FS							
	05	0.5%FS							
	10	1.0%FS							
	20	2.0%FS							
		<b>Code</b>	<b>Pressure type</b>						
		A	Absolute						
		G	Gauge						
		SG	Sealed gauge pressure						
		<b>Code</b>	<b>Output signal</b>						
		0010	Output: 0V-10V						
		420	Output: 4mA-20mA						
		0050	Output: 0V-5V						
		0545	Output: 0.5V-4.5V(Non-ratio)						
		0545R	Output: 0.5V-4.5V(Ratio)						
		RS485	Output: RS485(Modbus)						
		T	Special Specifications. Custom-Made						
		<b>Code</b>	<b>Power supply</b>						
		S1	(3~7)Vdc						
		S2	(5±0.5) Vdc						
		S3	(5±0.25)Vdc						
		S7	(8~40)Vdc						
		S9	(10~30)Vdc						
		S13	(12~30)Vdc						
		S15	(12~40)Vdc						
		S18	(12~28)Vdc/ac						
		T	Special Specifications. Custom-Made						
		<b>Code</b>	<b>Electrical interface</b>						
		C	Fixed cable and water proof IP68						
		<b>Code</b>	<b>Cable Material</b>						
		M1	polyethylene (PE)						
		M2	polyurethane (PU)						
		M3	PTFE						
		<b>Code</b>	<b>Cable length</b>						
		000	0M						
		001	1M						
		002	2M						
		T	Custom-Made						
		<b>Code</b>	<b>Explosion-proof function</b>						
		E	Ex explosion-proof						
		N	non-explosion-proof						
ZAXWEL31-	1M	03	G	420	S9	C	M1	002	N

## ➤ **Points to note**

1. Make sure that the output voltage of the power supply is correct, the positive and negative of the power supply correspond to the positive and negative connection of the product, and the high level is within the range of the product;
2. Probe pressure sensor is a precision device, the user in use, please do not disassemble, not to touch the diaphragm, so as not to cause damage to the product;
3. Please avoid the level transmitter cable terminals attached to the warning signs of flooding, causing water in the ventilation line, resulting in water bad transmitter;
4. Please avoid the level transmitter cable is cut by knife or other sharp metal objects, resulting in water damage to the transmitter;
5. The deep well transmitter should be fixed with the special clamp of the oil pipe and water pipe to prevent the cable from being damaged by extrusion, the sensor should be installed vertically, and the probe of the transmitter should not be buried or blocked by impurities such as silt
6. The outlet part of the tee is filled with special sealant gasket and sealant. The extruding nut is tightened with a wrench to prevent air leakage and water leakage
7. The whole signal line is led to the inside of the distribution cabinet to prevent the rain water from the terminal from seeping into the inside of the cable and causing damage. The transmitter is used for the installation of hydrology, seismic monitoring well and reservoir dam
8. When the transmitter is used for underground survey alone, and the length of the cable is more than 100 meters, an additional load-bearing steel wire rope should be added to the transmitter, along with the signal cable, to protect the signal cable from damage caused by excessive force.

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