

MODEL PL HYDROSTATIC PRESSURE LEVEL MONITOR



Features

- High accuracy and repeatability
- Protected against lightning surge
- Humidity/Dew immunity
- Minimal temperature error
- Diaphragm protection

Conformity

Surge protection (IEC801-5) for PL820 up to 12kV

General Description

The PL series, hydrostatic liquid level monitor, is comprised of a sensor and converter. This combination allows measuring of depth up to 100 meter. The PL series are ideal for use in water reservoirs, rivers, dams, deep wells, water gates, and deep tanks.

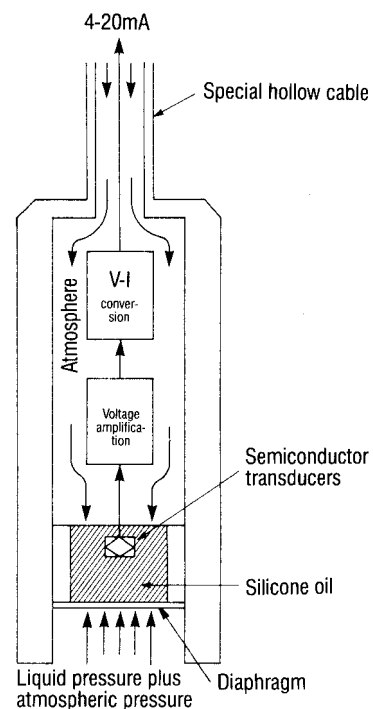
Operational Description

The sensor converts liquid pressure into current signals proportional to the liquid level. A semiconductor transducer containing silicon oil and a Hastelloy C-22 sealing diaphragm is employed to achieve accuracy and durability. In order to compensate for atmospheric pressure the cable contains a hollow "breathing" tube. Internal circuit is fully potted to provide immunity from humidity and condensation.

An integrated lightning arrester protects the sensor from damage caused by lightning surges and storm activity.

Advantages

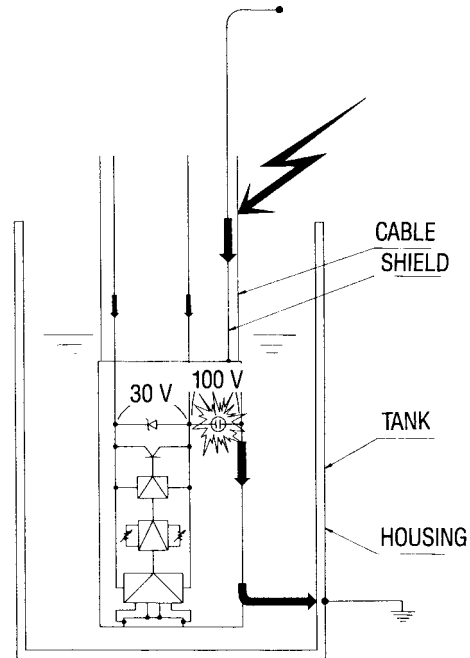
1. Protected against lightning surge
Model PL is provided with integral lightning arrester and surge absorber to protect against lightning surge.
2. Humidity/Dew immunity
Internal circuit is fully potted to avoid humidity or dew.



Surge Protection

To protect the PL from damage caused by lightning or electrical surges, the shield of the cable shall not be grounded. The shield wire in the cable is internally connected with the transducer housing. Thus, without any external grounding, the shield wire is already grounded through the water and the grounded tank.

When lightning struck to the cable, the large electric current flows from the shield wire to the ground through the housing, the water and the tank. This induced current may generate differential voltage between the positive and the negative signal wire or between the signal wire and the housing. The Zener Diode should suppress it and the Button Arrester should discharge it by flashing to change it into light energy.



Custom Variations

- Hypalon cable for corrosive liquids
- Terminal box for easy installation and wiring
- Rigid stainless steel pipe for turbulent or fast stream application

Life Expectancy

Life expectancy of the PL varies with applications such as corrosive liquids, existence of corrosive gas, humidity, lightning surge, etc.

As a rule of thumb, life expectancy is usually 7 years (this is an imagined figure without any responsibility or guarantee of ours.) or more under proper site conditions as described in our instruction manual. We recommend checking and adjusting the zero offset during annual inspection.



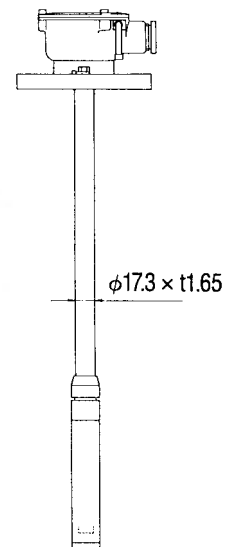
*Open angle control of the rever gate
(The PL is in the stilling tube)*



*Deep well monitoring with
Terminal box*

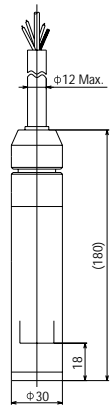
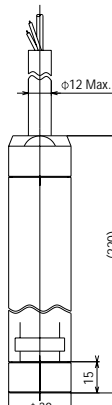
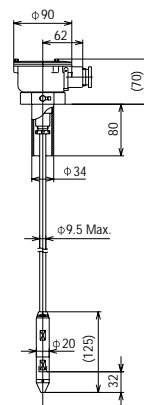


Flange mounting for indoor tank



Rigid stainless steel pipe

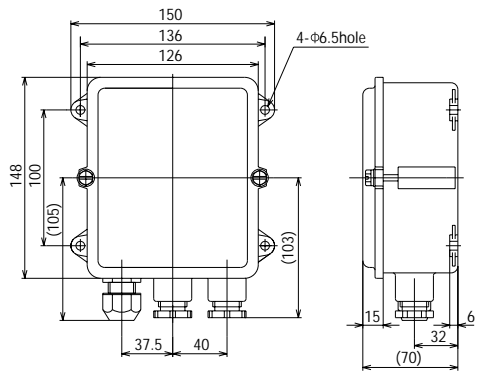
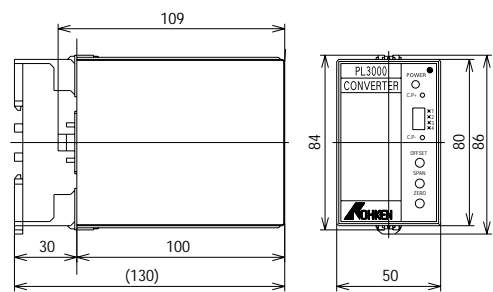
Specifications

Model	PL700	PL820	PL300
Description	3-wire	2-wire	Deep well
Drawing			
Measuring Range	0-4m, 0-10m, 0-16m, 0-40m, 0-100m		0-50m, 0-100m
Supply Power	12V DC	14 to 30V DC	12VDC
Output	4 to 20mA DC (Resistive)		
Load Resistance	300ΩMax.	500ΩMax.	300ΩMax.
Operating Temperature	0°C to 50°C		
Accuracy	±0.5% F.S.		
Lightning Protection	12kV (1.2/50us)		
Material	Housing		ADC12
	Body	304SS	
	Diaphragm	Hastelloy C	
	Cable*	PVC	PE
Mounting			
Cable Entry			JIS F 20a (G3/4)
Protection	Housing	Equivalent IP68	
	Body	Equivalent IP68	
Cable Length	15 meter		50 meter

*Other materials are available.

$$\chi = \sqrt{[0.5 \times \text{Maximum measuring range (m)} / \text{Measuring length (m)}]^2 + 0.5^2}$$

Converter

Model	PL7000	PL3000
Drawing		
Supply Power	100/200V AC ±10%, 50/60Hz	90 to 132/180 to 264V AC, 50/60Hz
Power to Sensor	12V DC	
Power Consumption	Approx. 2VA Max.	
Output	4 to 20mA DC	
Load Resistance	600ΩMax.	
Operating Temperature	-10°C to 55°C	0°C to 50°C
Material	ADC12	ABS
Cable Entry	1-Cable clamp 2-JIS F 15a (G1/2)	
Protection	Equivalent IP20	
Connected sensor	PL700, PL300	PL700, PL300

PL410	
Integral	
0-4m, 0-10m, 0-16m, 0-40m	
11 to 34V DC	
4 to 20mA DC (Resistive)	
650Ω Max.	
0°C to 50°C	
±χ% F.S. (See below formula)	
ADC12	
304SS	
Hastelloy C	
304SS	
JIS5K50A	
JIS F 20a (G3/4)	
Equivalent IP53	
Equivalent IP68	

<p>PL2000</p>	<p>PL8500</p>
90 to 132/180 to 264V AC, 50/60Hz	100 to 240V AC ± 10%, 50/60Hz
20V DC	24V DC
Approx. 2VA Max.	Approx. 5VA Max.
4 to 20mA DC	
600Ω Max.	
0°C to 50°C	
ABS	ADC12
	1-Cable clamp
	2-JIS F 15a (G1/2)
PL820	IP20
	L820