MODEL PL HYDROSTATIC PRESSURE LEVEL MONITOR

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

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.

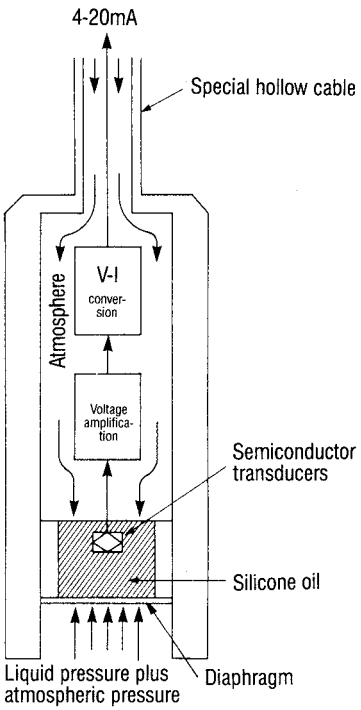
Operational Description

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 arrestor protects the sensor from damage caused by lightning surges and storm activity.

Advantages

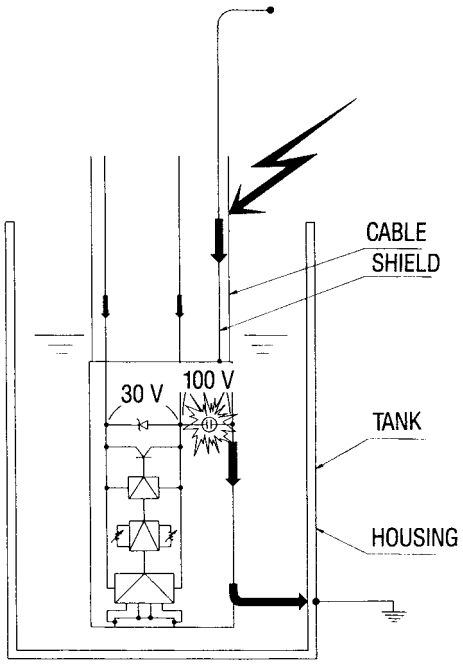
1. Protected against lightning surge
   Model PL is provided with integral lightning arrester and surge absorber to protect against lightning surge.
2. Humidity/Dew immunity
   Internal circuit is fully potted to avoid humidity or dew.



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.

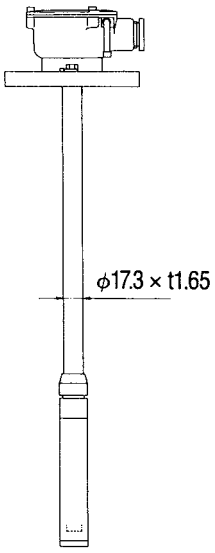
Open angle control of the rever gate (The PL is in the stilling tube)

Deep well monitoring with Terminal box

Technical Note

Do not connect to loop power system. The supply power on the loop power may be decreased, and PL may be malfunctioned.

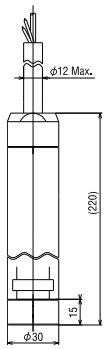
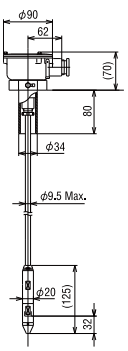
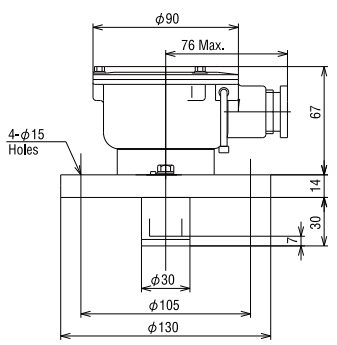
Flange mounting for indoor tank



Rigid stainless steel pipe

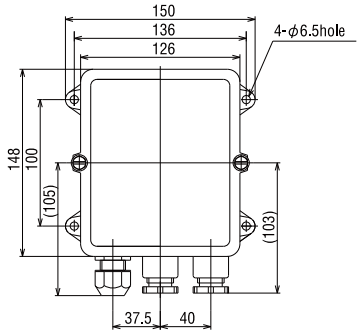
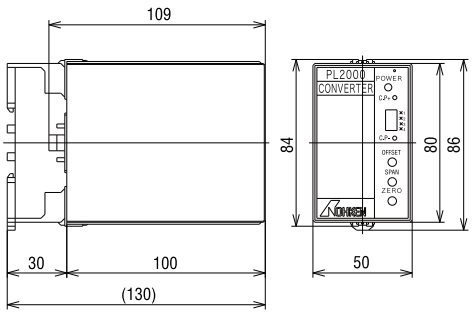
Specifications

Sensor

Model		PL820	PL300	PL410
Description		2-wire	Deep well, 2-wire	Integral
Drawing				
Measuring Range		4m, 10m, 16m, 40m, 100m	50m, 100m	4m, 10m, 16m, 40m
Supply Power		14 to 30V DC	12VDC	11 to 34V DC
Output		4 to 20mA DC (Resistive)		
Load Resistance		500ΩMax.	300ΩMax.	650ΩMax.
Operating Temperature		0˚C to 50˚C		
Accuracy		±0.5% F.S.		± χ % F.S. (See below formula)
Lightning Protection		12kV (1.2/50us)		
Material	Housing		ADC12	
	Body	304SS		
	Diaphragm	Hastelloy C-22	630SS	Hastelloy C-22
	Cable	PE, PVC, Hypalon	PVC	
	Flange			304SS
Mounting				JIS5K50A
Cable Entry			JIS F 20a (G3/4)	JIS F 20a (G3/4)
Protection	Housing		Equivalent IP53	Equivalent IP53
	Body	Equivalent IP68	Equivalent IP68	Equivalent IP68
Cable Length		15m (100m Max.)	50m	

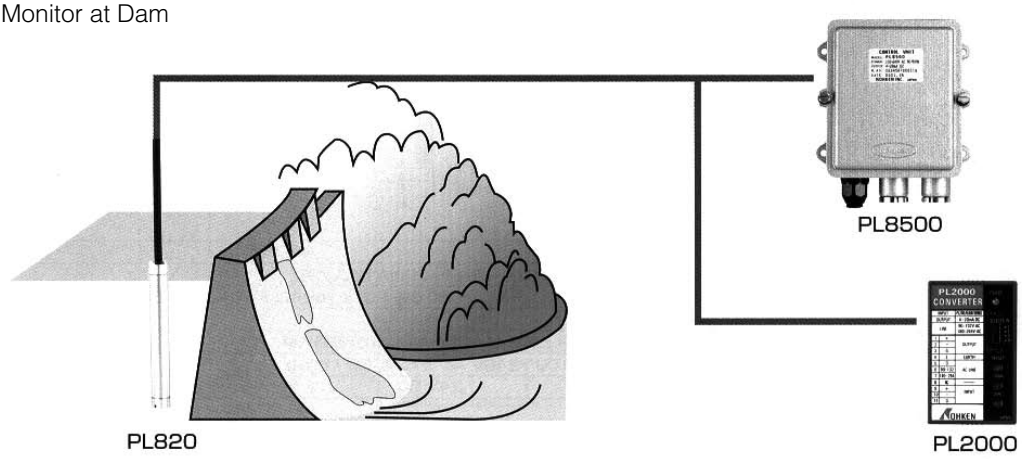
$\chi = \sqrt{\ }[0.5\times\text{Maximum measuring range (m)/Measuring length (m)}]^2+0.5^2$

Converter

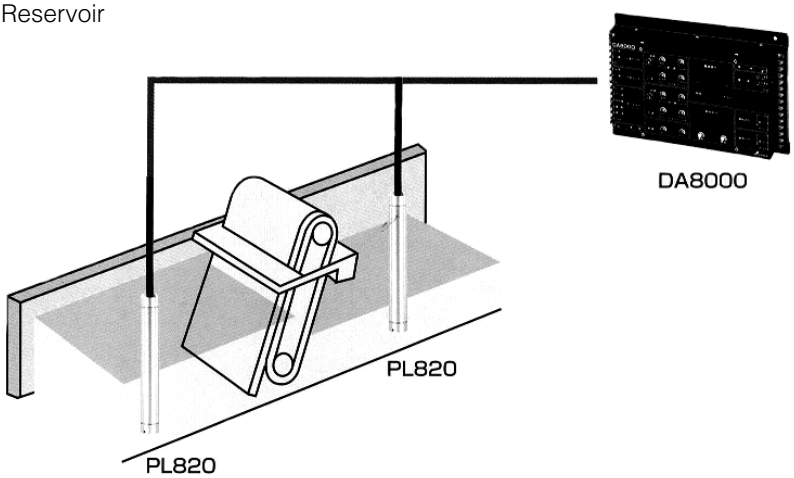
Model	PL8500	PL2000
Drawing		
Supply Power	100 to 240V AC ±10%, 50/60Hz	90 to 132/180 to 264V AC, 50/60Hz
Power to Sensor	24V DC	20V DC
Power Consumption	Approx. 5VA Max.	Approx. 2VA Max.
Output	4 to 20mA DC	4 to 20mA DC
Load Resistance	600Ω Max.	600Ω Max.
Operating Temperature	0˚C to 50˚C	0˚C to 50˚C
Material	ADC12	ABS
Cable Entry	2-JIS F 15a (G1/2) with I.D. 9 bushing 1-JIS F 15a (G1/2) with I.D. 12.5 bushing	
Protection	IP20	
Connected sensor	PL820	PL820, PL300

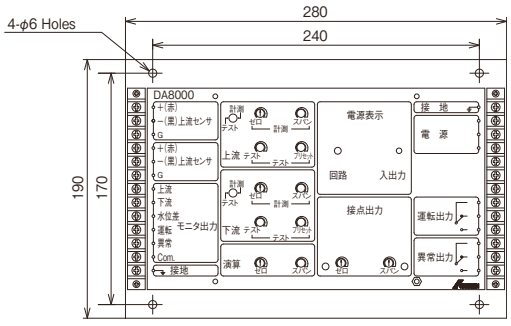
Application

Water Level Monitor at Dam



Differencial Level Monitor at Reservoir



DA8000

90 to 132/180 to 264V AC, 50/60Hz
24V DC
Approx. 4VA Max.
0 to 5V DC
-10˚C to 50˚C
SPC
IP20
PL820