

TECHNOLOGY

**HOLYKELL®**

**HPT604-A**  
**LEVEL**  
• DATASHEET •

1. Pressure Measurement   **2. Level Measurement**   3. Temperature Measurement  
4. Flow Measurement   5. Display & Control Instruments  
6. Wireless Monitoring System   7. Velocity Measurement

# HPT 604-A

## Submersible Pressure Water Level Transducers & Transmitters

### Applications

- Irrigation Equipment
- Sea Water Level Measurement and Control
- Deep Well and Groundwater Monitoring
- Vessel and Storage Monitor Systems
- Control of Lift and Pumping Stations
- Surface Water Monitoring
- Dewatering

### Features

- GE pressure cell, 0.25% F.S.,
- 316L stainless steel diaphragm,
- 316L body construction shock and erosion
- Custom level ranges from 50cm to 500m
- Unique 8 pressure holes design
- IP68 full sealed plastic waterproof design
- Lightning and Surge Protection
- Custom PU, PE or FEP cable lengths

### Profiles

HPT604-A is a submersible level transducer suitable for liquid level and depth measurement. It consists of an U.S.A imported GE piezoresistive sensing element encased in 316L housing. It's all stainless steel, hermetically sealed housing make it suitable for immersion in most industrial liquids and oils.

Each submersible pressure transducer features a removable nose cone at the sensor which protects the diaphragm from damage. Units come equipped with a 270-pound tensile strength shielded and vented cable. Ventilation tube in the cable automatically compensates for changes in atmospheric pressure above the tank. The vent is protected with a maintenance free filter eliminating particulate or water droplets from entering the transducer.

HPT604-A incorporates lightning and surge protection utilizing dual arrestor technology, and assures under the input and output short-circuit conditions to prevent reverse connection. It also eliminates both power supply surges and lightning ground strike transients.

Holykell can provide a cost effective solution for level monitoring for a variety of applications. Welcome your inquiry.



Measuring range	
bar	0 to 0.05 ... 0 to 50
inWC	0 to 20 ... 0 to 20000
psi	0 to 1.0 ... 0 to 725
mH2O	0 to 0.5 ... 0 to 500

When choosing the FEP cable, only measuring ranges up to 0 ... 10 bar, 0 ... 150 psi and 0 ... 100 mH2O are available. The given measuring ranges are also available in mbar, kPa and MPa

Materials		
Wetted Parts	Standard	Optional
Sensor	Stainless steel 316L	Titanium alloy
Housing&Filter cap	Stainless steel 316L	Titanium alloy
Cable	PE	PU/FEP

### Mounting position

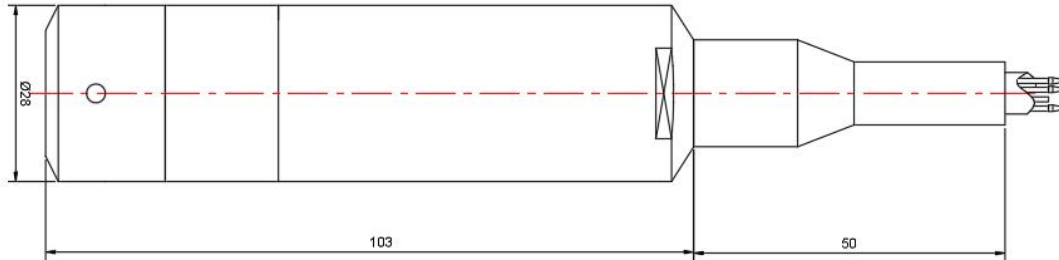
Calibrated in vertical mounting position with pressure connection facing downwards.

**Specifications**

Ambient Temperature: 25°C (unless specified)

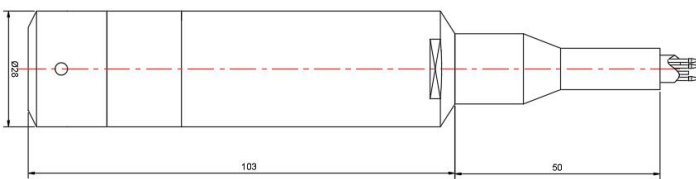
Parameter	HPT604-A							
Pressure Range	0-0.05 Bar.....50 Bar / 0-0.5m.....500m H <sub>2</sub> O Optional (See P1 page description) *1000m H <sub>2</sub> O max can be specially customized * 80m max for SDI-12 signal							
Overload	150% F.S.							
Burst Pressure	500% F.S.							
Accuracy	≤ ±0.5%F.S(Typical); ≤ ±0.25%F.S (by customized) @25 degree C							
(Linearity Hysteresis Repeatability)	Including non-lin., rep. and hys. Optional							
Long-term Stability	≤ ±0.1%F.S. of span/year							
Working Temp.	-40°C~80°C(non-corrosive medium)							
Storage Temp.	-40°C~80°C(Nitrile rubber sealing ring); -20°C~80°C(fluororubber rubber sealing ring)							
Temperature Compensation	0°C~80°C							
Medium compatible	Compatible with 316L Stainless Steel							
Electrical Wire	2 Wires		3 Wires			4 wires		
Output	4-20mA	1-5V;0-5V	0-10V	0.5-4.5V non-ratiometric	SDI-12	Dual 4-20mA	RS485	Modbus RTU
Power Supply	7-30Vdc	8-30Vdc	13-30Vdc	5Vdc±5%	12Vdc	12-30VDC	3.5-36Vdc	
Polarity protection	Yes Power wires-Yes; Signal Wires-Yes, Power&Signal Wires-No!							
Insulate resistance	> 100M Ω@50V							
Zero Temp. Drift	0.2%FS/°C (≤100kPa) ; 0.1%FS/°C (>100kPa)							
FS Temp. Drift	0.02%FS/°C (≤100kPa) ; 0.01%FS/°C (>100kPa)							
Electrical connection	Fixed cable with vented tube and water proof IP68							
Response time	≤10 ms							
Pressure Type	Gauge pressure; Sealed gauge and absolute optional.							
Certificate	Exia IICT6, TUV RoHS and CE Certificate							
EMC Standard	EN 61326-1:2013; EN 61326-2-3:2013 EN 61000-6-2:2005; EN61000-6-4:2007+A1							
Lightning Protection (optional functions)	Air conduction more than 8000V; external sensor more than 4000 Voltage protection.							
Cable optional	Cable materials are optional according to request, we offer 3 types of special cables as follow: PE Cable (Water Proof) ; PU Cable (Oil/Fuel Proof) ; FEP Cable (Anti-Corrosive)							

**Dimensions and Drawing**



Unit: mm

**Electrical Connections**



		Direct cable outlet	
	Current	Red	U+
		Green	Iout(U-)
		Yellow	⊥ Connect to earth ground
	Current(4-20mA P/L+T)	Red	U+
		Green	Iout(U-)
		Yellow	⊥ Connect to earth ground
		Blue	T
	Voltage/SDI-12	Red	U+
		Green	Vout(for voltage) Signal (for SDI-12)
		Yellow	⊥ Connect to earth ground
		Black	U-
	RS485 RTU Modbus	Red	U+
		Black	U-
		Green	RS485A
		Blue	RS485B
		Yellow	⊥ Connect to earth ground

### How to Order

#### 1. Range Selection Table:

00	0~0.5	01	0~1.0	02	0~1.1	03	0~1.2	04	0~1.3	05	0~1.4	06	0~1.5	07	0~1.6	08	0~1.7
09	0~1.8	10	0~1.9	11	0~2	12	0~2.1	13	0~2.2	14	0~2.3	15	0~2.4	16	0~2.5	17	0~3
18	0~4	19	0~5	20	0~6	21	0~7	22	0~8	23	0~10	24	0~12	25	0~15	26	0~16
27	0~20	28	0~25	29	0~30	30	0~35	31	0~40	32	0~50	33	0~60	34	0~80	35	0~100
36	0~150	37	0~200	38	0~250	39	0~300	40	0~500	X	By Customized						









Kindly according to your application select suitable range code , Example: code 19 = 5 .  
 Unit of measure select on the Part Number Selection Table . Example: Code H=mH<sub>2</sub>O , that's 5m H<sub>2</sub>O

#### 2. Part Number Selection Table:

<b>604A</b> Selection Type	<b>19</b>	<b>H</b>	<b>G</b>	<b>E5</b>	<b>S11</b>	<b>CW</b>	<b>N</b>	<b>1</b>	<b>002</b>
Range	Range reference to range selection table code								
Pressure & Level Units	H=m H <sub>2</sub> O (Min: 0.5 mH <sub>2</sub> O; Max:500 mH <sub>2</sub> O ) B=bar (Min: 0.05bar Max: 50bar) P=Psi (Min:1Psi; Max:725Psi) K= KPa (Min:5 KPa; Max:5000 KPa) I= inWC (Min: 20 inWC; Max: 20000 inWC ) MB= mbar (Min: 50 mbar Max: 50000 mbar)								
Pressure type	G=Gauge/Relative pressure type (universal) A=Absolute pressure (customized)								
Signal Output	E5=4-20mA(2 wires)    E6=0-5V(3 wires)    E7=0-10V(3 wires) E8=0.5-4.5V(3 wires)    E11=RS485(MODBUS) E16=SDI-12    E22=Dual 4-20mA(P/L+T) (3 wires) E0=1-5V (3 wires)    X= By Customized								
Power Supply	S6=5Vdc    S5=12Vdc S11=7-30Vdc    S12=8-30Vdc    S42=3.5-36Vdc S17=10-30Vdc    S43=13-30Vdc    X= By Customized								
Measuring Medium	CW= Water HW= Max 100 degree C geothermal water								
Others Function (Optional)	N= Standard Type TAP =Titanium alloy process materials (high cost!) ANC= Anti-corrosion type (for lower than 10m level range situation) AW=Additional weight 10=1/2"NPT male electronic connector mounting								
Accuracy	1=0.5%F.S(Typical)    2=0.25%F.S optional    4=0.1%F.S. (by customized)								
Cable length	001= Cable 1m    002= Cable 2m    003= Cable 3m    X= By Customized								

### Accessories

(Notes: Please purchase separately. For the price of accessories, please contact our sales.)

	Description	Order number
	<p><b>Liquid level display control device</b> With all kinds of liquid level sensor, measurement according to liquid level, and according to the setting of the container structure and size and the density of liquid, calculation, display liquid volume or quality.</p>	0008
	<p><b>Flange</b> 4 holes 316 SS flange, size can be customized</p>	0001
	<p><b>Locking flange</b> For locking cables, made of aluminum alloy</p>	0029
	<p><b>Conduit adapter</b> 316 SS 1/2" NPT male cable conduit adapter. Must be factory installed.</p>	0011
	<p><b>Terminal box</b> The terminal box, with IP67 ingress protection and watertight ventilation element, provides a moisture-free electrical termination for the submersible pressure transmitter. It should be mounted in dry environment or directly in the switch cabinet.</p>	0003
	<p><b>Additional weight</b> The additional weight increases the dead weight of the submersible pressure transmitter. It simplifies the lowering into monitoring wells, narrow shafts and deep wells. It effectively reduces negative environmental influences on the measuring result from the measured medium (e.g. turbulent flow). Stainless steel 316L, approx. 1.46kg, height (H) 70 mm</p>	0009
	<p><b>Adapter Converter</b> It is able to convert RS-232 signal to RS-485 balanced differential signal and extend the communication distance to 1.2km. It uses a particular pump to gain power from RS-232 signal (RTS, DTR, TXD) without initializing the RS-232 series interface. This interface converter does this without requiring any AC or DC power.</p>	0005
	<p><b>Surge electrostatic protector</b> Anti-surge <math>\pm 2000V/\pm 4000V</math>, anti-static 18KV, suitable for protecting 4-20ma and RS485 circuits.</p>	0014

### Ordering information

Model / Measuring range / Output signal / Temperature measurement / Cable material / Cable length / Case / Lightning protection / Accessories