TECHNOLOGY

HOLYKELL®

HPT603

LEVEL
•DATASHEET•

HPT 603

Submersible Pressure Water Level Transducer & Transmitter

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
- Level Measurement in Oil Tanks
- Monitoring of Gasoline & Diesel Fuel Tanks

Features

- GE pressure cell, 0.5% F.S.
- 316L stainless steel diaphragm,
  316L body construction shock and erosion
- Custom level ranges from 50cm to 200m
- Customization installation thread
- IP68 full sealed waterproof design
- Lightning and Surge Protection
- Custom PU, PE or FEP cable lengths

Profiles

HPT603 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.

HPT603 incorporates lightning and surge protection utilizing dual arrestor technology, and assures under the input and output short-circuit conditions to prevent reverse connection. It 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 20
inWC	0 to 20 …0 to 8000
psi	0 to 1.0…0 to 300
mH2O	0 to 0.5…0 to 200

When choosing the PTFE cable, only measuring ranges up to 0 ...2 bar, 0..30 psi and 0 ... 20 mH2O are available. The given measuring ranges are also available in mbar, KPa and MPa

Materials

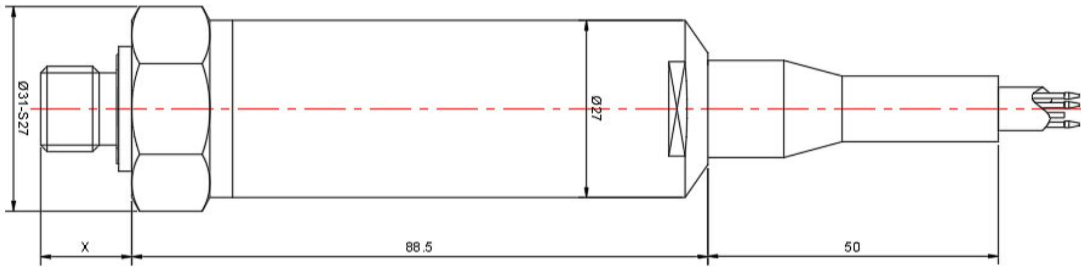| Wetted Parts	Standard	Optional
Case & sensor	Stainless steel 316L	Flush Ceramic
Protection cap	NA	NA
Cable	PUR/PE	FEP

Mounting position
Calibrated in vertical mounting position with pressure connection facing downwards.

1

Specifications

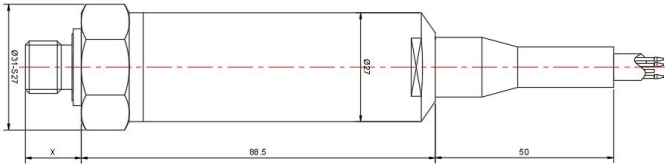Ambient Temperature: 25°C (unless specified)

Parameter	HPT603				
Pressure Range	0-0.05 Bar…..20 Bar / 0-0.5m...........200m H_2O Option				
Overload	150% F.S.				
Burst Pressure	500% F.S.				
Accuracy	≤ ±0.5%F.S @25 degree C; (≤ ±0.25%F.S@25 degree C by customized)				
(Linearity Hysteresis	Including non-lin., rep. and hys.				
Repeatability)	Optional				
Long-term Stability	≤ ±0.1 % of span/year				
Working Temp.	-40℃~80℃(non-corrosive medium)				
Storage Temp.	-40℃~80℃(Nitrile rubber sealing ring); -20℃~80℃(fluororubber rubber sealing ring)				
Temperature Compensation	0~50℃				
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	RS485 Modbus RTU
Power Supply	7-30Vdc	8-30Vdc	13-30Vdc	5Vdc±5%	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/℃（≤100kPa）； 0.1%FS/℃（>100kPa）				
FS Temp. Drift	0.02%FS/℃（≤100kPa）； 0.01%FS/℃（>100kPa）				
Process Connection	G1/2'' male, M20*1.5 male, 1/4''NPT male; M10*1 male Flange mounting, 2'', 3'', 4'' flange or by customized				
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	Ex ia 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 request, we offer 3 type special cable as follow: PE Cable（Water Proof）；PU Cable（Oil/Fuel Proof）；FEP Cable（Anti-Corrosive）				

Dimensions and Drawing

Unit: mm

Electronic Connections

Direct cable outlet			
Current	Red	U+	
	Green	Iout(U-)	
	Yellow	⏚ Connect to earth ground	
Voltage	Red	U+	
	Green	Vout	
	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	X		By Customized												

Kindly according to your application select suitable range code , Example: code 23 = 10 .

Unit of measure select on the Part Number Selection Table . Example: Code H=m H_2O, that's 10m H_2O .

2. Part Number Selection Table:

603 Selection Type	23	H	G	E5	S11	3	CW	N	1	003

Range	Range reference to range selection table code
Pressure & Level Units	H=m H_2O (Min: 0.5 mH_2O; Max:200 mH_2O) B=Bar(Min: 0.05 bar Max: 20 bar) P=Psi(Min:1Psi; Max:300Psi) K= kPa (Min:5 kPa; Max:2000 kPa) I= inWC (Min: 20 inWC; Max: 8000 inWC) MB= mbar (Min: 50 mbar Max: 20000 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) E21=0.5-4.5V non-ratiometric (default, 3 wires) E8=0.5-4.5V ratiometric (by customized, 3 wires) E0=1-5V(3 wires)　　　　　　　　E11=RS485(MODBUS) X= By Customized
Power Supply	S6=5Vdc　　　　　　　S10=12-30Vdc S11=7-30Vdc　　　　　S12=8-30Vdc　　　S42=3.5-36Vdc S43=13-30Vdc　　　　　X= By Customized
Pressure connection	6=G1/4'' male (Typical)　　3=1/4'' NPT male　　7=G1/4" Female 8=M20x1.5 male　　　9=G1/2'' male　　10=1/2'' NPT male 26=1/4''-18 NPT Female　　11=M10x1.0 male　　X= By Customized
Measuring Medium	CW=Water　　SW=Sea water　D1=0.84g/cm3 density diesel D2=0.83g/cm3 density diesel　　　　D3=0.85g/cm3 density diesel D4=0.86g/cm3 density diesel　　　X=By Customized
Others Function (Optional)	N=Standard Type　　TAP=Titanium alloy process materials T=With Temperature Sensor/Output (only RS485) ELP=With external surge and lightning protection box/device
Accuracy	1=0.5%F.S (Typical)　　2=0.25%F.S(by customized)　　3=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
	Liquid level display control device 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.	0008
	Flange 4 holes 316 SS flange, size can be customized	0001
	Locking flange For locking cables, made of aluminum alloy	0029
	Conduit adapter 316 SS 1/2" NPT male cable conduit adapter.Must be factory installed.	0011
	Terminal box 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.	0003
	Additional weight 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	0009
	Adapter Converter 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.	0005
	Surge electrostatic protector Anti-surge ±2000V/±4000V, anti-static 18KV, suitable for protecting 4-20ma and RS485 circuits.	0014

Ordering information

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